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The AUGUST 1995

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AUGUST 1995 Issue 158 £3.25

IDG MEDIA

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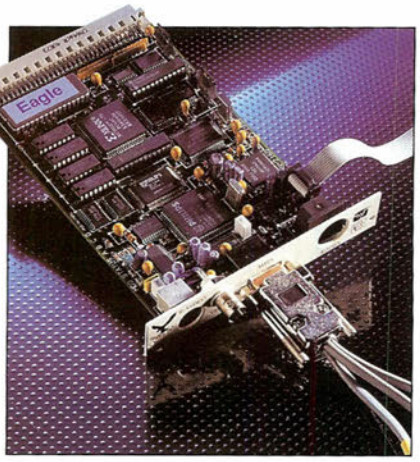
MAKE THE MOST OF MULTI-MEDIA

Are you wondering how to make the most of the multimedia resources available to you — scanned images (drawings or photos etc), video clips, music and sound samples, Replay movies, MPEG video clips or movies, teletext......?

Computer Concepts offer a range of related products that can help you produce your own sound and video productions; all the hardware and software you need to input, manipulate and output stills, video and sound.

EAGLE M2

The ultimate multi-media expansion card — combining the functionality of a high quality (24bit) video digitiser with real time digital movie capture facilities, stereo sound sampling and playback, plus MIDI. All the software you will need to manipulate the captured data is included in the package — TakeTwo for video manipulation, ScanLight for grabbing and manipulating still images, AudioWorks for manipulating audio samples and generating audio effects and !AudioCtrl provides mixing facilities. The card is also sold with real time video movie compression software from Eidos, which considerably speeds up and simplifies the process of movie generation. The video files you create can be played back using Acorn Replay. Suitable for any Acorn RISC computer except 3000/4000 series, requires 2MBytes RAM and RISC OS 3.1 or later (4MBytes, an ARM3 and a high data rate IDE or SCSI hard drive for movie recording and sound output).



An optional extra is the latest release from Eidos — their Eidoscope video editing software, which can be used to edit movies created on an Eagle card and includes many professional video editing tools.

EIDOSCOPE

Price: Eagle card with Eidos compression software: £329 + £6 p&p + VAT (£386.57 inc.) Eagle card with Eidoscope: £449 + £6 p&p + VAT (£534.62 inc.) Eidoscope for existing Eagle owners: £169 + VAT (£198.57 inc.)

Acorn Replay

Lark

16 BIT STEREO/AUDIO SYSTEM FOR ACORN RISC COMPUTERS

A 16 bit audio sampling and play back expansion card. Features include stereo line-level input and output, MIDI connection and software support. A copy of AudioWorks is included to handle the capture, manipulation and playback of samples and a copy of !AudioCtrl which controls the Lark's sampling options (for example sampling to memory or disc, continuous of single shot sampling, background or foreground sampling and setting of sample rates and formats). Suitable for any Acorn RISC computer except 3000/4000 series, requires 2MByte and RISC OS 3.1 or later.

Price £199 + £6 p&p + VAT (£240.87 inc.)



MidiMax Card

An expansion card designed to provide a stand alone MIDI solution at an affordable price. A 16 byte memory buffer is included on the card for both transmit, and receive which means no data is lost even when the MIDI interface is transmitting at maximum rate. Standard MIDI In, Out and Thru connectors are provided, with the added benefit of a second Out connector to ease the interfacing of multiple devices. MidiMax is supplied with the same MIDI support software as the Eagle M2 and offers full compatibility with Acorn MIDI implementation. Suitable for any Acorn RISC computer except 3000/4000 series, requires 1MByte and RISC OS 3.1 or later.

Price: £69 + £6 p&p + VAT (£88.12 inc.)

IN THE ACORN WORLD

Combining the ScanLight 256 scanner (400 dpi, 256 grey levels) and GreyHawk digitiser. The digitiser offers real time greyscale video digitising from any video source. Includes the ultra-fast 'TakeOne' previewer, allowing live video in a window on the desktop — at quarter screen size this can update at 50 frames per second, far faster than any other digitiser. ScanLight software provides image enhancement of captured images, such as smoothing,



rotation, cropping, sharpening. Suitable for all models of Acorn RISC computer with 2MBytes.

Computer Concepts offer a range of other colour and greyscale scanners and digitisers — please ask for further details.

Price: £220 + VAT (£258.50 inc.)

The MPEG card allows full screen, full motion MPEG videos to be played back at better than VHS quality, with CD quality stereo sound tracks. MPEG videos can be played from hard disc or MPEG compatible CD ROM drives. Any Video CD format CDs are suitable (feature films, music videos etc) as are multimedia CDs that include MPEG clips. Any application that can display Replay movies can play MPEG movies. The software provides video type control over the movie eg fast forward, pause etc. Any frame can be captured as a 24 bit full colour sprite. Requires a Risc PC with 4MBytes and a suitable RGB monitor or TV capable of 50Hz PAL modes.

Price: £249 + £6 p&p + VAT (£299.62 inc.)



TV tuner comes in two forms; a tuner only device which allows live TV to be displayed, either through connection to a video composite compatible monitor or in a window on the desktop in machines that have a digitiser installed. The user can scan the frequency range, set up frequency pre-sets and select channels. The second option with Teletext software can access and display all the pages available on Teletext, select Teletext or Fastext pages, decode foreign teletext and save pages out as either text or sprite files. Suitable for any Acorn RISC computer except 3000/4000 series, requires 2MBytes and RISC OS 3.1 or later.

Price: TV Tuner only £89 + £6 p&p + VAT (£111.62 inc.)
TVTuner+Teletext software £159+£6 p&p + VAT (£193.87 inc.)

Pioneer 602X CD Rom drive

Many multimedia resources are supplied on CD, so Computer Concepts also include a CD ROM drive in their range. The Pioneer DRM-602X is a double speed (300 kilobytes per second transfer rate), 6 disc CD ROM drive. Multi session PhotoCD compatible. It can also be used for standard audio compact discs. ArtWorks clip-art CD disc included. Suitable for any model of Acorn RISC computer, requires 2MBytes and a fully Acorn compatible SCSI card with CDFS 2.2.



RRP: £499.00 + £10 p&p + VAT (£598.07 inc.)

Computer Concepts have other products in their range which can also be used in this field — for example a range of video genlocks, colour digitisers and flatbed scanners, the ColourCard graphics accelerator card and many more. Please ask for our Product Guide.

Computer Concepts Ltd

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CONTENTS

Editor's letter

I still remember the first time I played *Elite*. I was 14, it cost a fortune (for a BBC game), and it took me days to get into it. The fact that the centre section of my manual was missing didn't deter me from persevering, and I eventually became Elite on both the tape and disc versions. Next was the 6502 second processor version, and then, years later, the Archimedes version.

And that's the version on our cover disc. It's over 10 years since *Elite* first hit the world's computer screens, but Archimedes *Elite* is more than a 10-year-old game converted for RISC OS. It's the best version ever, and it's still the most addictive computer game I've ever played. Enjoy yourselves.

Mark Moxon, Editor

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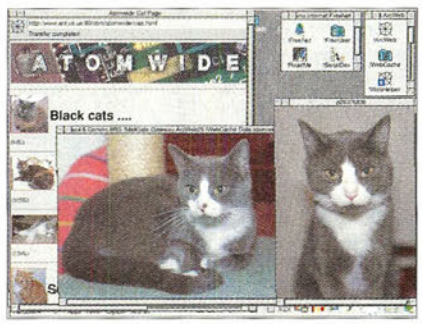
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REGULARS





HANDS ON



EDUCATION

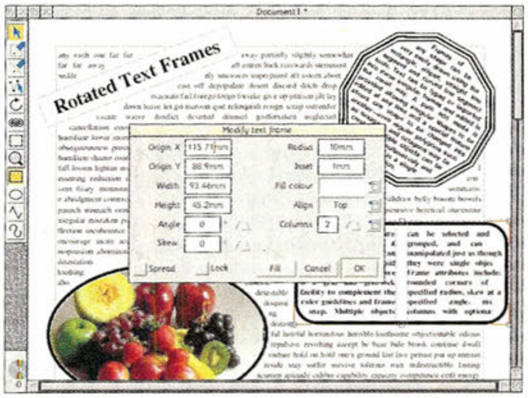


August 1995

REVIEWS

FEATURES







Next month in Acorn User

Reviews galore
We've had so much software and hardware arrive at the editorial office that there's almost no room to move. So next month we'll be bringing you pages and pages of the latest products, all put under the spotlight of *Acorn User*'s reviews crew.

TAOS
TAOS has been hailed as the future of operating systems for multi-processor machines, and with the forthcoming multi-ARM board for the Risc PC, the Acorn platform is shaping up to be an excellent development system for TAOS applications. Steve Turnbull unveils the future of programming.

Elite: the secrets
Following our fantastic cover disc this month, Clive Gringras – co-author of the Archimedes version of *Elite* – describes what it was like to convert the greatest game of all time, and lets you into a few secrets about playing the game.

Plus more
And, of course, there are all our regular features, education coverage and hands on section, plus the cover disc.

NEXT ISSUE ON SALE 10 AUGUST

ICS

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Buy any 2 for £30

10 our of 10 Driving Test	10OU	£17
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Selected prices 17th June 1995

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Repro	OAKS	£46
Resultz	COLT	£75
Resultz secondary site licence	COLT	£312

Item	Supplier	Price
Revelation ImagePro 24 bit, KS2-4	LONG	£48
– secondary site licence	LONG	£328
Rhapsody 2	CLAR	£48
Rhapsody 3	CLAR	£74
Rhythm-Bed	CLAR	£38
RISC OS 3 Applications Upgrade	ACOR	£10
RISC OS 3 Programmer's Reference Manual	ACOR	V0£99
RISC OS 3 User Guide for Risc PC 600	ACOR	V0£22
RISC OS Style Guide	ACOR	V0£13
Risc PC Technical Reference Manual	ACOR	V0£35
RiscBASIC Compiler	SILO	£77
Rosie and Jim, age 4-6: Duck loses his Quack, Jim gets the Sneezes	SHER	£10
Round the World Yacht Race, age 9+	STOR	£26
RTF and WordPerfect Loaders and Savers	COMC	£28
S-Base 2 Developer	LONG	£92
– site licence	LONG	£398
S-Base 2 Personal	LONG	£47
– site licence	LONG	£189
Sally and Wally	OREG	£20
Saloon Cars Deluxe	FOUR	£22
– Extra Courses	FOUR	£15
Schema 2	CLAR	£95
Science	MICS	£23
Scrabble	USGO	£21
ShapeFX	DATS	£10
Sibelius 6	SIBE	**£134**
– primary site licence	SIBE	£289
– secondary site licence	SIBE	£539
Sibelius 6 + Sibelius 7 Student	SIBE	£525
Sibelius 6 secondary site licence + Sibelius 7 Student	SIBE	£749
Sibelius 7	SIBE	£736
Sibelius 7 Student	SIBE	£464
– site licence	SIBE	£959
Sim City	KRIS	**£22**
Sim City 2000 for A5000	KRIS	**£30**
Sim City 2000 for Risc PC	KRIS	**£30**
Simon the Sorcerer	GAME	£28
Sleuth	BEEB	£50
Sleuth 2	BEEB	£93
smArt (not Risc PC)	4MAT	£33
smArtFiler	4MAT	£24
Smudge the Scientist, age 4+	STOR	POA
Smudge the Spaniel, age 4+	STOR	£19
– site licence, age 4+	STOR	£42
SnapHappy	OAKS	£19
Snippet	4MAT	£32
SolidCAD	SILO	£77
Somerset Talking Computer Project Learning Materials	LONG	V0£29
Space City, age 7-9	SHER	£25
SparkFS	PILL	£20
Special	ICSO	£10
Special site licence	ICSO	£30
Speech!	SUPE	£18
Speedball II	KRIS	£18
Spelling week-by-week	CHAL	£20
Spex	ASPE	£98
Split an Image (not Risc PC), age 6-16	SHER	£17
Star Fighter 3000	FEDN	£23
Starspell Plus	FISH	£19
Studio24	PINE	£165
Stunt Racer 2000	FOUR	£24
– Extra Tracks	FOUR	£16
Swiv (not Risc PC)	KRIS	£9
TableCalc	ISVP	£24
TABS	ASPE	£95
Talking Clocks	TOPO	£32
Talking PenDown, KS1-3	LONG	£53
– primary site licence	LONG	£189
Technodream (Nevryon 2)	SUPE	£19
TechWriter Professional	ICON	£195
Textease with Spelling Checker	SOFE	£39
– primary site licence	SOFE	£79
– secondary site licence	SOFE	£118
Time Detectives ... The Victorians, age 7-11	SHER	£42
Time Machine	FOUR	£19
Time Traveller, KS2	ESMO	£39
Time Traveller, KS2 :	ESMO	
Britain Since 1930		£28
The Victorians		£30
Tudor and Stuart Times		£33
TinyDraw/TinyLogo	TOPO	£25
Titler	CLAR	£77
Topographer	CLAR	£59
Touch Type	IOTA	£38
– site licence for 10	IOTA	£137
Trace	PILL	£9
TurboDriver: Canon, Epson Stylus 800, HP	COMC	**£39**
Twain, various titles	PILL	£16
Tween	OAKS	£27
TWO (Task and Window Organiser)	ICSO	£10
– site licence	ICSO	£30
TypeStudio	BEEB	£38
Vector (not Risc PC)	4MAT	£75
VersaTile	OAKS	£42
Videopack, various titles	ANGL	£34
Virtual Golf	FOUR	£22
Vox Box	CLAR	£40
Voyage of Discovery, age 9-13	SHER	£31
WimpGEN	SILO	£76
Wolfenstein 3D	POWE	£23
Wordz	COLT	£54
WorraCad	OAKS	£65
WorraCad site licence	OAKS	£275

Acorn Risc PC 600

Item	Supplier	Price
5M HD210		£1145
5M HD210 14" Monitor		£1294
5M HD210 17" Monitor		£1575
5M HD210 CD System 14" Monitor		£1499
5M HD210 CD System 17" Monitor		£1775
9M HD420		£1445
9M HD420 14" Monitor		£1594
9M HD420 17" Monitor		£1875
9M HD420 CD System 14" Monitor		£1794
9M HD420 CD System 17" Monitor		£2075
Case Mid Upgrade for Risc PC 600 2M and 5M	ACOR	£98
Ethernet Network Interface Card for Risc PC 600	ACOR	£98
Hard Disc Fitting Kit for Risc PC 5¼" bay	ICSO	£20
IDE Internal Interface	ICSO	£60
IDE Removable Hard Disc Kit for Risc PC, 270 Mb	ICSO	£409
Indigo CD Rom Drive CAA300iA	CUMA	£212
Proteus CD Rom / Optical Drive, Risc PC / PC / Apple Internal	CUMA	£548
Removable Hard Disc Fitting Kit for Risc PC 5¼" bay	ICSO	£20
Risc PC 486 Card, special offer if ordered with computer	ACOR	£99
Risc PC Sound Card	ACOR	£58
SCSI II Interface for Risc PC	CUMA	£165
SIMM 4 Mb 32 bit		£120
SIMM 8 Mb 32 bit		£225
SIMM 16 Mb 32 bit		£370

Acorn Portables

Item	Price
Pocket Book II 256K	£203
Pocket Book II 512K	£248
Pocket Book II Class Pack	£1999
A-Link for Pocket Book	£43
Flash Disc 256K for Pocket Book	£46
Mains Adaptor for Pocket Book	£15
Parallel Link for Pocket Book	£26
RAM Disc 128K for Pocket Book	£42
Battery Pack for A4	£53

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IDE Internal Hard Disc Kit for A3000 Series :	
80 Mb	£149
120 Mb	£185
240 Mb	£299
Internal Interface only	£75
IDE Internal Hard Disc Kit for Archimedes Range :	
240 Mb In short supply – please check	£199
330 Mb In short supply – please check	£225
420 Mb	£275
540 Mb	£299
1000 Mb	£499
Internal Interface only	£60
Hard Disc Cradle Kit for Archimedes	£15
Hard Disc Fitting Kit for A3000	£7
Hard Disc Fitting Kit for A3020	£7

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Item	Price
IDE 2½" Hard Disc, 80 Mb	£89
IDE 2½" Hard Disc, 120 Mb	£125
IDE 2½" Hard Disc, 240 Mb	£239
IDE 3½" Hard Disc, 240 Mb	£149
IDE 3½" Hard Disc, 330 Mb	£175
IDE 3½" Hard Disc, 420 Mb	£225
IDE 3½" Hard Disc, 540 Mb	£249
IDE 3½" Hard Disc, 1000 Mb	£449
Form Factor Converter 2½" to 3½"	£7
Second Hard Disc Fitting Kit for A5000	£15
Second Hard Disc Y Power Lead	£7

ICS Removable IDE 3½" Hard Discs

Item	Supplier	Price
Cartridge, 105 Mb	SYQE	£52
Cartridge, 270 Mb	SYQE	£55
Kit for A5000, 270 Mb		£399
Fitting Kit for A5000		£25

Printers

Item	Supplier	Price
A4-1200/1 Direct Drive Laser Printer	CALL	£978
Bubble Jet BJ-10sx	CANO	£149
Bubble Jet BJ-30	CANO	£179
Bubble Jet BJC-70	CANO	£275
Bubble Jet BJ-200ex	CANO	£212
Bubble Jet BJC-600	CANO	£359
– Ink Cartridge, Black	CANO	£9
– Ink Cartridge, Cyan	CANO	£10
– Ink Cartridge, Magenta	CANO	£10
– Ink Cartridge, Yellow	CANO	£10
Bubble Jet BJC-800 + TurboDriver		£1160
– Ink Cartridge, Black	CANO	£16
– Ink Cartridge, Cyan	CANO	£19
– Ink Cartridge, Magenta	CANO	£19
– Ink Cartridge, Yellow	CANO	£19
Bubble Jet BJC-4000	CANO	£270
– Ink Cartridge	CANO	£40
– Ink Cartridge, Black	CANO	£26
– Ink Tank, Black	CANO	£9
– Ink Tank, Colour	CANO	£15
DeskJet 500 Series Tri-chamber Colour Ink Cartridge	HEWL	£23
DeskJet 540	HEWL	£229
DeskJet Ink Cartridge, Black	HEWL	£21
EP-L Toner Cartridge for LBP-4	CANO	£59
EP-S II Toner Cartridge for LBP-8	CANO	£69

Memory

Item	Supplier	Price
A3000 1 - 2 Mb	IFEL	£57
A3000 1 - 4 Mb	IFEL	£110
A3010 1 - 2 Mb	IFEL	£38
A3020 / A4000 2 - 4 Mb	IFEL	£74
A305/310/440 1 - 2 Mb	IFEL	£83
A305/310/440 1 - 4 Mb soldered with MEMC1A	IFEL	£173
A5000 2 - 4 Mb	IFEL	£79

Other hardware

Item	Supplier	Price
486 PC Card 25 MHz 4 Mb	ALEP	£455
486 PC Card 50 MHz 4 Mb	ALEP	£523
A3010:	ACOR	
Action Pack		£249
2M Early Years		£319
2M Early Years Med-Res SVGA Multiscan System		£499
2M Learning Curve		£319
2M Learning Curve Med-Res SVGA Multiscan System		£481
A3020 FD Med-Res SVGA Multiscan System	ACOR	£589
A305/310/440 RISC OS 3 Carrier Board	IFEL	£19
A4000 HD210 Med-Res SVGA Multiscan System	ACOR	£839
AnDi Oddule	BAIL	£49
Backplane, 4-slot 4-layer with fan	IFEL	£55
ColourCard Gold	COMC	£195
DMI 30	AUDI	£73
DMI 50	AUDI	£84
DMI 50 - S	AUDI	£162
Dongle Dangle	ICSO	£6
Eagle M2	COMC	£315
Ergo-keyboard	CAST	£90
Fan Filters (pack of 10) (not A5000 or Risc PC)	ICSO	£6
Fan Kit for A300 / A400	ICSO	£15
Lambda16	IRLA	£98
Lark A16	COMC	£195
Logitech Mouse for Acorn		**£19**
Midi Max	COMC	£68
Movie Magic	COMC	£245
Power Pad (Dual)	ECLI	£29
Power Pad (Single)	ECLI	£22
PowerWAVE 30	AUDI	£177
PowerWAVE 50	AUDI	£195
PowerWAVE 50 - S	AUDI	£245
Proteus CD Rom / Optical Drive, Acorn / PC / Apple External	CUMA	£648
RISC OS 3 Bulk Software Upgrade Kit (set of 10)	ACOR	£325
RISC OS 3 Software Upgrade Kit	ACOR	£77
ScanLight 256	COMC	£158
ScanLight 256 for A3000/3101/3020/A4000	COMC	£168
ScanLight Video 256	COMC	£205
– A3000/A4000	COMC	£205
Sound Force 1 Multimedia Speaker System	QUIC	£34
SVGA Multiscan PS Monitor 17"	ACOR	£589
TV Tuner	COMC	£88
TV Tuner with Teletext	COMC	£157
User Port / MIDI Upgrade for A3000	ACOR	£48
Vision 24:	HCCS	
A3000 external		£91
A3000/3010/3020/4000 internal		£67
A5000/400/300/RPC600		£67
Vision 24 508 line:	HCCS	
A3000 external		£117
A3000/3010/3020/4000 internal		£91
A5000/400/300/RPC600		£91
Whisper Fan Quietener (for A300/A400 Series only)	ICSO	£15
Wizzo5 for A5000	ICSO	£39

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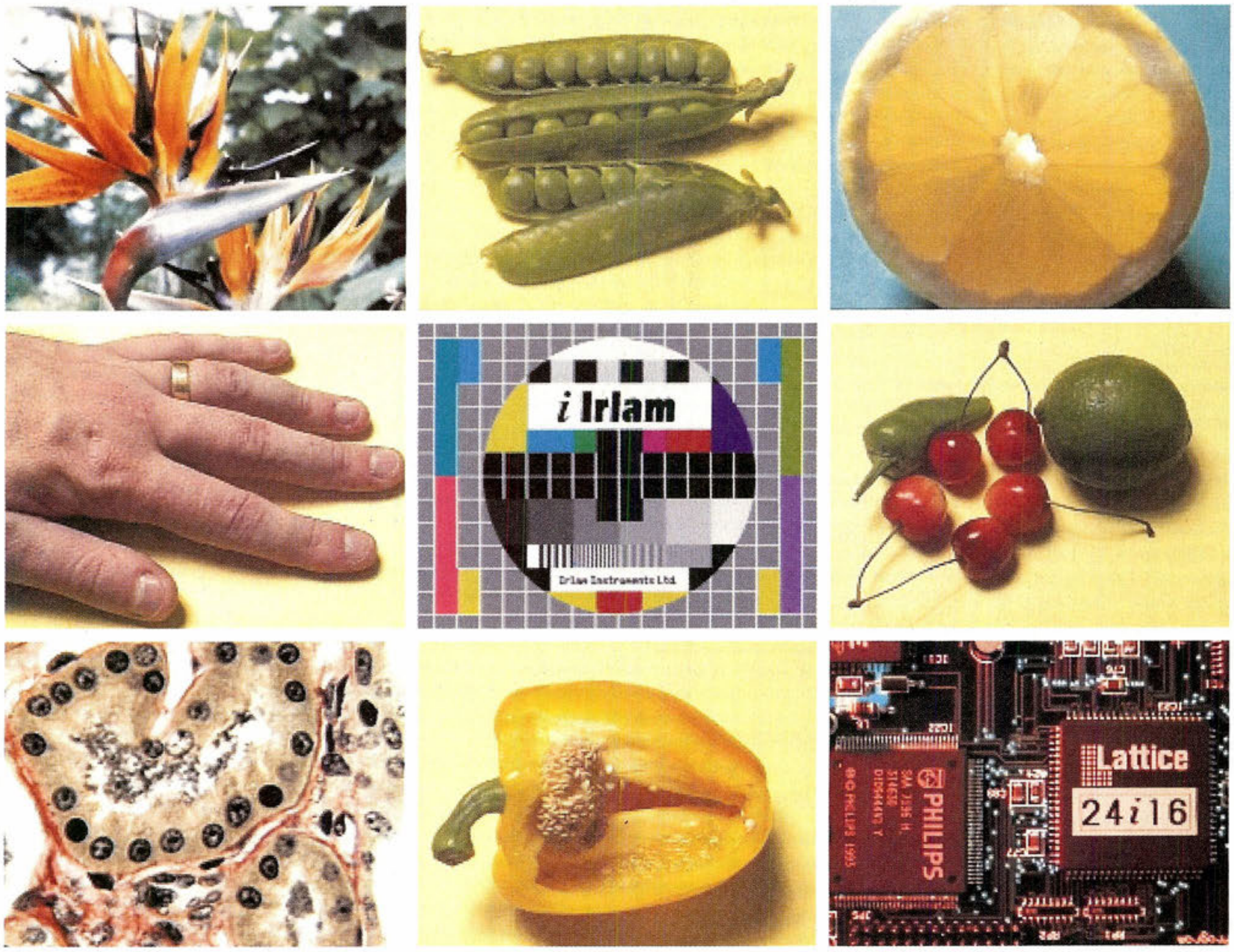
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News

Two-page Acorn update

INTERESTING things are happening at Vision Park in Cambridge. Over the past month a number of stories have emerged with important implications both for Acorn and for those who use its computers. Some of them have been wild speculation; others have been nearer the mark. *Acorn User* presents the definitive guide to what's happening at Acorn, Online Media and ARM Ltd.



Lightspan wants to use this box to link schools and family homes in America. Could this be the long-awaited breakthrough for Acorn technology across the Atlantic?

Another Online Media deal

Online Media has returned to its roots with the announcement of its latest set-top box (STB) customer deal. STBs are more associated with leisure than education, but Online Media's latest customer, The Lightspan Partnership Inc wants to put Online Media STBs into US schools as well as homes. Could this hint at the ultimate destiny of Acorn Computer Group?

Lightspan is to trial the latest version of Online Media's STB, which uses the new highly integrated ARM7500 chip and an optional CD-ROM drive. Lightspan is already experienced in interactive educational applications in the US and hopes STBs will become a valuable tool in bridging the gap between the home and the classroom.

The idea is that schools install STBs in their classrooms and families install them in their homes too. This will not only give families access to leisure programming, but also identical curricular material to that being used at school.

No details are being revealed about the value of the Lightspan deal or implementation time scales, but nevertheless the deal represents another crucial trophy for Online Media in its programme to establish itself as a leading interactive multimedia player.

Not a profits warning

News of Online Media's latest deal with The Lightspan Partnership Inc. was balanced by a paragraph which was interpreted by the financial press as a profits warning. The statement read: 'In the UK, Acorn's personal computer business continues to experience difficult trading conditions which will again adversely affect results in the traditionally weaker first half of the year. This is despite a strong contribution from Acorn's flagship model, the Risc PC. Management action is being taken to address the situation.

'Progress at Acorn's associated company, Advanced RISC Machines Limited, continues to be in line with the Board's expectations.'

Acorn's corporate communications manager, Hilary Swift, explained that while the press appeared to have treated the Lightspan Partnership news release as two separate stories, this had not been intended by Acorn.

The section about Acorn's personal computer business difficulties had simply been included to balance a single item of extremely good news with the core Acorn business and therefore not to misguidedly influence Acorn's share price, in line with stock exchange guidelines.

Indeed, at the time of the recent rights issue (see the April issue) *Acorn User* asked Acorn's managing director, Sam Wauchope what he expected of his company's prospects. There are no indications that the business plan he had then has been significantly changed. Acorn's share price dropped marginally by 2.5p to 90p.

New FileCore beta-test

Hard disc drive prices have fallen spectacularly in the last year. Three years ago, a 100Mb drive was a generous norm and 512Mb drive was an expensive luxury few could afford. Now a 1Gb drive can be obtained for less than £250.

Unfortunately, filing systems dating back from the 1980s (including earlier versions of PC DOS and RISC OS) have had built in limitations regarding the size of a hard disc they can address, usually set to an upper limit of 512Mb. This means having to format hard drives larger than 512Mb into two separate virtual drives or partitions, each no larger than 512Mb – a clumsy solution.

A revised RISC OS FileCore, the business end of the RISC OS filing system, has been developed to eliminate the 512Mb restriction by increasing the partition limit to 128Gb. Acorn Clan members will be given the privilege of beta-testing the new FileCore, which will probably happen around the time this issue of *Acorn User* is published.

The new FileCore is to be supplied as a software overlay on floppy disc. According to Acorn's Chris Cox, who oversees the Clan, the FileCore beta release is only intended for Risc PC machines.

He also confirmed that the new FileCore would only address hard drive size limitations and not other features like long file names. File names on RISC OS are limited to 10 characters, although the success of Jason Tribbeck's *LongFiles* utility, which extends this capability to 55 characters, shows that most RISC OS applications can cope easily with longer file names.

ARM710 and 700 updates

ARM 710 Risc PC processor upgrade modules will start shipping towards the end of July, according to Acorn. This is later than had been expected, but anyone waiting for an ARM700 upgrade, the version which can take a floating point accelerator chip, will have to wait much longer.

A problem running the ARM700 card with a PC co-processor is the reason. Meanwhile, the ARM710 – which is clocked at 40MHz compared to the standard ARM610's 30MHz – will be priced £100 as promised by Acorn last year. That price is in exchange for your old ARM610 card.

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All printer/TurboDriver bundles are available direct from Computer Concepts.

All printers are supplied with all necessary leads, a user guide, one ink cartridge (or set of), DOS & Windows drivers and one years off site maintenance. The stand alone TurboDrivers can be bought from any Acorn dealer, the RRP is £49 + VAT, street prices may vary. The new printers and TurboDrivers are suitable for all Acorn RISC computers, with 2MBytes of RAM (4MBytes for colour)

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Email: Info@cconcepts.co.uk

Silly season speculation

The summer months are traditionally a lean time for solid news, though this month's collection of stories does appear to contradict that trend. The Risc PC continues to do well, but being well past its first birthday, Acorn watchers are hungrily eyeing the horizon for new excitement from their favourite computer firm. Unfortunately, this often leads to some bizarre speculation.

That august organ of the Apple world *Mac User*, declared in its June 23 issue that Acorn was due to announce its participation in a Mac PowerPC clone manufacturing exercise. They even persuaded a senior Apple R&D vice president to agree that Acorn making clone Macs, among others, would make 'perfect sense.' Unfortunately it did not appear that Acorn had been consulted on the matter. *Acorn User* was met with a frustrated response from Acorn representatives who utterly denied the implication of its inclusion in the *Mac User* news story. Olivetti, Acorn's majority shareholder, apparently is seriously interested in Mac clones, while Acorn has indeed badged a PowerPC-based box in its new *SchoolServer* network offering. The best explanation is that someone put two and two together and got five.

Meanwhile, there has been some discussion on the Internet regarding the suggestion that Acorn is working on a PowerPC version of RISC OS which would be licensed to any interested parties. Since IBM – with a marketing budget rather larger than Acorn's annual turnover – is struggling to establish its own OS/2 as a credible alternative to *Microsoft Windows*, even on the IBM PowerPC hardware platform, the idea of RISC OS for PowerPC doesn't look very sensible. And that's before you examine the technical considerations. Anyway, Acorn users need a better version of RISC OS before any messing about with non-ARM versions begins.

Next on the speculators list is new machines. 'What new machines?' says Acorn. Nothing has been officially released to date on new machines. Naturally, if Acorn wasn't working on new machines we might as well all pack it in now; of course they *are* working on new machines and we will learn about them in due course. The ingredients and climate are all there: the old A3010/3020/4000 and A4 line are well past their sell-by date, only the Risc PC is selling in decent quantities, Online Media has already applied the brilliant new ARM7500 composite computer on a chip and, last but not least, Acorn needs a real crowd-puller for the Acorn World show at the end of October.

FPA – lean and mean

In 1993 Acorn released the FPA10 floating point accelerator chip for the A5000. It was a 25MHz part and no good for the later 33MHz A5000 which was released prior to the Risc PC. Belatedly, Acorn has released the 33MHz FPA11 floating point accelerator for owners of the faster A5000.

Acorn's documentation indicates the FPA11 is 30 per cent faster than the FPA10 with typical 4MFLOPs performance peaking at over 6MFLOPs. The FPA11 will also be featured on Risc PC ARM700 cards once these are released onto the market later in the year. FPA11s are priced £99 + VAT and can be ordered from any Acorn dealer.

German market problems

Acorn is not abandoning the German market, but it has closed its Dusseldorf head office, with the loss of three jobs. Acorn has worked hard to establish a sales channel in Germany and this will be maintained from the UK by Acorn's International office, which is headed by Bob Coates. Sales in Germany are apparently not high enough to sustain a local office, but while considerable costs will be saved by the closure of the office in Dusseldorf, Acorn remains committed to nursing the fledgling German market.

PowerPC-based school server

Believe it or not, Acorn has launched its first RISC-based computer which is not based on in-house ARM hardware. A PowerPC processor lies at the heart of Acorn's new super network server for schools, called Acorn *SchoolServer*. The server hardware is made for Acorn by IBM and it runs a version of Microsoft Windows NT Server 3.5 tailored for school networks and Acorn clients in particular. In fact the system is based on Microsoft's own *SchoolServer* platform which was launched at BETT in January and will enable a school to provide server support for Acorn, Apple and PC users on the same network.

An Acorn *SchoolServer* is a relatively powerful network server system for storing and retrieving files and software, sharing resources like network printers and CD-ROMs and for enabling multi-platform co-existence. For an Acorn client machine to connect with an Acorn *SchoolServer*, you need to install ANT Limited's *OmniClient* software, which is supplied as part of an server installation package.

For die-hard Acorn fans, the fact that Acorn has endorsed a flavour of Microsoft Windows and an alien RISC processor will be hard to swallow. However, the *SchoolServer* offering makes a great deal of sense. The days of Acorn-exclusive schools are numbered and there is a genuine demand for cross-platform compatibility at the network level. It also eases the adoption of Acorn client machines in schools which have not been able to consider buying Acorn computers before.

As commendable as it is, the Risc PC was never designed to be a powerful multi-platform server machine. It could have been worse, the server Acorn might have chosen could have been Intel-based, but at least Acorn's belief that RISC is best is still enshrined in the IBM hardware chosen.

Acorn, on the other hand, will reassure its established education customers that their investment in other Acorn networking solutions – like *Access* and *Level 4 Fileserver release 3* – is safe, as these remain core Acorn products.

Acorn *SchoolServer* is regarded as a high-end solution for large schools with an extensive network which probably has to serve more than just Acorn client machines. Ironically, Acorn – which has indirectly been one of Microsoft's very vocal critics, is now endowed with a Microsoft label considered prestigious in the PC industry – that of being a *Microsoft Solution Provider*. Even more ironic is that a collaboration like this points to a more prosperous and stable future for Acorn.

Pocket Book price cuts

Acorn's successful custom version of the Psion Series 3a pocket computer, the Acorn Pocket Book II, has been made even more attractive with some useful reductions in price.

The Pocket Book II with 256K RAM has been reduced from £229.74 + VAT to £205 +VAT. The 512K RAM model drops from £280.81 + VAT to £255 + VAT and the Pocket Book II Class Pack, consisting of ten Pocket Book 256 IIs, a desktop data link, parallel printer link and a mains power supply, has dropped by almost £250 to £2050 + VAT.

Acorn reveals that over 15,000 Acorn Pocket Books have been sold so far, with Class Pack sales doing especially well.



A PowerMac, badged by Acorn and running RISC OS on its PowerPC processor, is apparently *not* part of Acorn's future plans.

New low-cost SyQuest drive



The new removable hard drive from SyQuest

SYQUEST, a long time innovator on the removable disc drive scene, has introduced a new low-cost removable disc drive aimed squarely at the consumer or SOHO (small office home office) market. The new 135Mb EZ135 drive is expected to sell for around £149 + VAT and spare cartridges will cost around £12.50 + VAT. SyQuest drives are popular in the publishing industry, in which Acorn has a presence. However, EZ135 cartridges are not compatible with SyQuest's existing professional range of removable drives. 135Mb sounds modest in a time when 500Mb static drives are rapidly approaching the £100 mark, but SyQuest believes the convenience of a removable drive like the EZ135 will make it a winner. Higher capacity EZ drives are expected to follow.

Herald Communications
Tel: 0171-222 8515

iSV latest

FONT specialist iSV Products has announced its latest font pack, a Hebrew word processor and a new catalogue. The new word processor, called *AlephWriter*, is currently being beta-tested and allows Hebrew text to be entered from right to left. Text can be exported in both *Draw* and *Impression* formats and a variety of Hebrew fonts will be supplied with it when it ships later this year.

Talking of fonts, 298 RISC OS 3 fonts are contained in the latest iSV font pack. This includes fully scaffolded Latin 1 character sets, Welsh characters and kerning pairs. There is also a new font installer which is designed to work both with Fabis Computing's *EasyFont* package and Look Systems' *FontDir*. A special offer is currently being run whereby customers can buy both the new *Font Pack 298* plus the earlier *Font Pack 277* for £46.50 inc carriage. On its own, *Font Pack 298* is priced £25.

For more iSV information, including Issue 3 of the iSV product guide or a £2 demo disc, contact iSV.

iSV Products
Tel: (01344) 55769

Spring Show a success for the public

THE 1995 *Acorn User* Spring Show was a success for the visitors and exhibitors alike, said Geoff Potter, managing director of organisers Safesell Exhibitions. This year's event was only two days long compared with previous three day events, so overall attendance was down – with a marked reduction in the number of teachers visiting the event this year.

However, many exhibitors found that the calibre of visitors attending the show was very high. Computer Concepts, who had half-price software offers, sold out of several product lines before the first day was out. There were similar stories from Cumana and Uniqueway, while Castle Technology reportedly said that it was their most successful show yet.

'We only had one complaint,' said Potter. 'An exhibitor criticised us for not having the event more often and not far enough north!'

Whether the show was successful enough to survive for another year remains to be seen.

Eesox CD-ROMs

CD-ROM specialist Eesox has reduced the prices of its Gold range of CD-ROM drives, improved the specifications of its Silver range and introduced a new Platinum drive, plus a new parallel port drive. All drives now get a £30 voucher towards CD-ROM mastering orders placed with Eesox.

The new Silver range specifications improve reading speeds from 2x to 2.4x and this is combined with a faster seek time to give an average of 60 per cent improvement. Silver range drives start at £149, Gold range drives are reduced in price to £249 for the 4.4x speed (660K/sec) tray-loading model and from £299 to £279 for the 4x caddy-loading model. The new £419 caddy-loading Platinum drive, sourced from Plextor, is the fastest yet, with a 6x speed (900K/sec) mechanism. All prices exclude VAT.

For Acorn machines with the second generation chip-set featuring a bi-directional parallel port, Eesox has introduced a budget £199 inc VAT parallel port 2x speed drive. Network CD-ROM towers, holding between two and six drives apiece are now available, starting at £479.

Eesox
Tel: (01223) 264242
Fax: (01954) 789078

Faster, cheaper 486s

Aleph One has introduced a better value, faster version of its unique higher performance Risc PC 486 card. The new model uses an 80MHz 486 processor instead of the earlier 66MHz part but the price is unchanged at £399 + VAT. Software support has now been extended to include 1280x1024 screen resolutions plus 24-bit colour if 2Mb VRAM is fitted. At the same time, Aleph One has reduced the prices of its old-style 486 PC podules; the 25MHz version is now £299 + VAT without RAM and the 50MHz version is £349 + VAT.

Aleph One,
Tel: (01223) 811679
Fax: (01223) 812713

Multimedia success

Four of the triumphant schools in this year's NEMA (National Educational Multimedia Awards) event, used Acorn computers to create their winning entries.

Acorn-using NEMA winners were Hempsill Hall Primary School in Nottingham, Stephenson Way Primary School in Co. Durham, Handcross Park School in West Sussex and Northgate Primary School in Bishop's Stortford.

Prizes will be officially awarded by computer games star Dominik Diamond at the NEMA awards ceremony which will be opened by Eric Forth, Minister of State for Education, at the Birmingham Repertory Theatre on July 26.

The Senlac craft

Brighton-based Acorn dealer Senlac Computing generated some welcome publicity for itself and for Acorn in the local press, always welcome at a time when Acorn is frequently overlooked.

The report concerned Senlac's recent and unusual accreditation as an official member of the Guild of Master Craftsmen. Senlac Computing joined the Guild because there was no equivalent body dedicated to the computer business world.

Senlac's managing director, Peter Sykes, said he hoped that by being a member of the Guild he would be able to help assure potential customers that they would be dealing with a solid and reliable company.

Innovation from Longman

THIS month Longman Logotron has announced a pair of innovative teaching aids for the classroom – *Junior Insight*, a science data logging application for key stage 2 and 3 pupils, and *LRTV* (Look and Read Special TV) which supports the BBC Schools TV programme of the same name.

Junior Insight is a cut-down version of the original Longman Logotron *Insight* package designed to help teachers design data handling projects which can capture the minds of their pupils. In this junior version of the program, the menu and control panels have been simplified for use with younger pupils. Data can be captured from continuous sensors like thermometers, light sensors, etc., plus switch sensors like light gates and pressure pads. Sampling rates can be altered and data can be shown in table or graphic form.

Niall McAtasney, systems manager for Superchoice, the Active IT course providers, commented: 'The simplified menu and control panel of *Junior Insight* opens up all kinds of learning opportunities for younger pupils in the classroom. By relating IT to the real world with fun activities, limited only by the teachers' imagination, data handling requirements of the national curriculum can be achieved in an enjoyable and memorable way.'

Junior Insight is compatible with popular sensory interface kits like Unilab, Sense and control, LogIT, SenseIT, Philip Harris hardware and the new LIVE box – a new low-cost system designed specifically with the national curriculum in mind.

LRTV was developed in conjunction with BBC Educational Publishing as part of its *Look and Read* series. *LRTV* activities are set set in a breakfast TV studio. One of the interactive scenarios is a news desk in which pupils need to check story spelling and punctuation after mischievous computer viruses have played 'full stop football' with the news. Key Stage 2 English topics, including writing, punctuation, spelling and grammar are covered by *LRTV*. Ten interactive activities are included on floppy disc, along with story boards, illustrations and pupil activity sheets. Other *Look and Read* series include *Earthwarp, Skyhunter, Geordie Racer* and *Through the Dragon's Eye*.

Junior Insight is priced £44 + VAT for a single user or £143 + VAT including a LIVE box. *LRTV* is priced £25.50 + VAT.

Longman Logotron has also announced a CD-ROM version of *PicturePoint*, a new data handling package for young children. With the aid of colourful pictures and talking graphs, *PicturePoint* aims to introduce the disciplines of data collection and data analysis to Key Stage 1 pupils. The PicturePoint CD is priced £29 + VAT and a site licence is costs £90 + VAT.

Longman Logotron
Tel: (01223) 425558



Northwest SEMERC in Oldham has produced a major catalogue of software and hardware products for schools and special needs establishments. The full colour 40 page catalogue includes details of 300 software packages for Acorn, PC and Apple Mac users, plus hardware products like CD-ROM drives and overlay keyboards. The SEMERC catalogue is available on request from SEMERC, tel: 0161-627 4469, fax: 0161-627 2381.

New range

THE EIGHTH edition of Cumana's CD-ROM/Multimedia and Networking Portfolio has been released, reflecting Cumana's increasing activities as both a publisher and a manufacturer able to provide support for individual products as well as site-wide networks. New products range from educational titles, the new CD-ROM/re-writable optical drive and the SJ Research Nexus ATM networking solution plus Nucleus file server.

Cumana
Tel: (01483) 503121
Fax: (01483) 451371

No illusions

After three and a half years and 20 issues, *Illusions* disc magazine is no more. Illusions has ceased to be due to lack of funds. *Illusions* blames its predicament on an unsuccessful partnership with the games software house, Games-Ware. In its time, *Illusions* could rightly claim to be the most popular Acorn format magazine on disc, absorbing rivals *State of the Arc* plus *Virtuality* along the way.

More SoundLab enhancements

SoundLab, the sound processing utility supplied with Oak Recorder sound samplers from Solent Computer Products, has undergone further enhancements as suggested by existing users, according to the company.

Additions include a reverse option which can be applied to all or part of a sample, plus effects like echo, fade and filter. Samples can also be cut to the clipboard and merged with others. The software is also easier to use for smaller children and there are two new BASIC utilities demonstrating the use of sound module SWIs. Software upgrades are available for £5 + VAT.

Solent Computer Products Ltd,
Tel: (01954) 789701
Fax: (01954) 782186

Handy audio applications

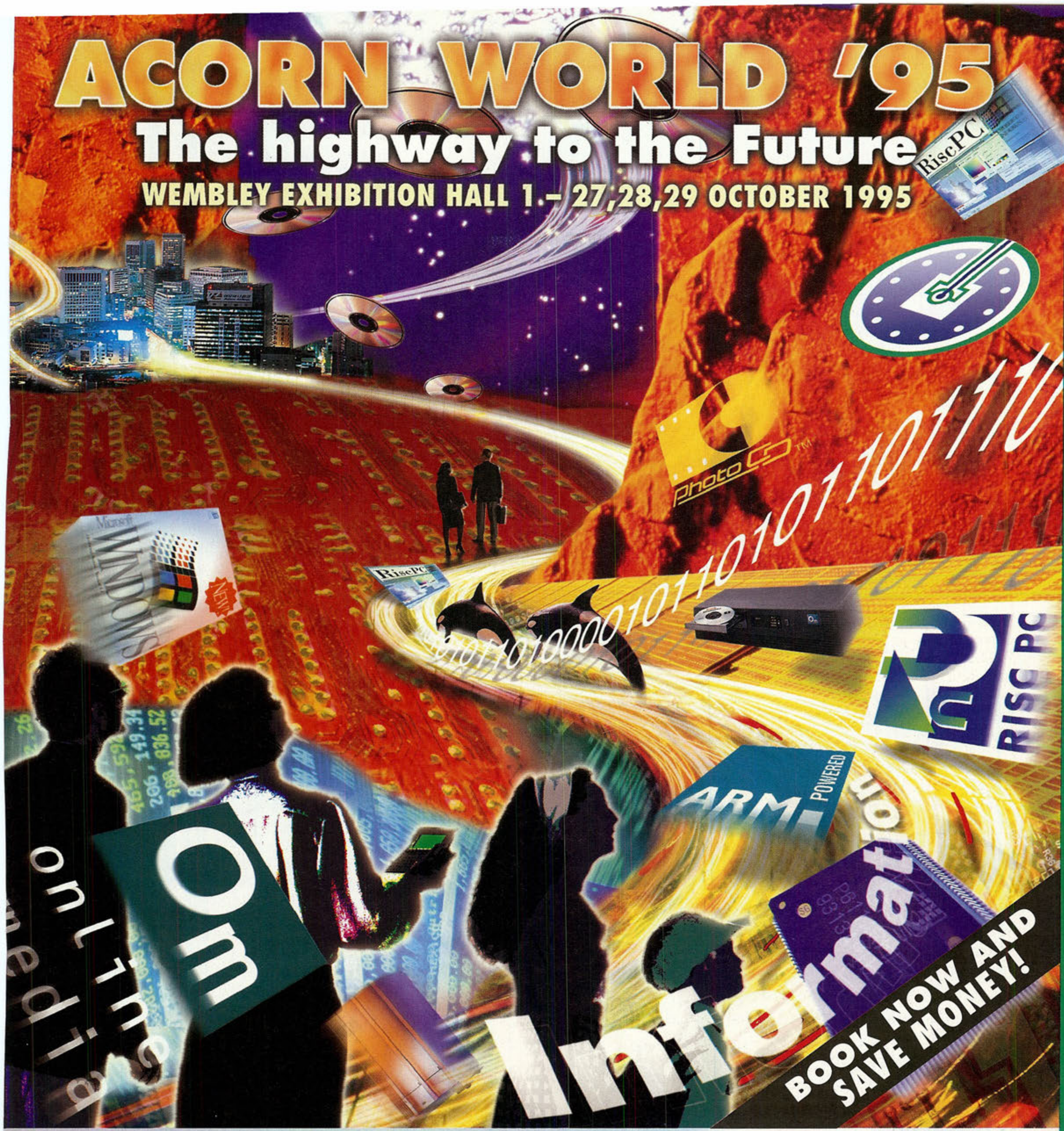
A family of three CD-ROM utilities for users playing audio CDs has been produced by Jonathan Hunt. *AudioCD* is a CD playback utility which also displays the title of the track being played, *AudioFS* is a RISC OS filer front-end for audio CD tracks and *KeyCD* is a multi-tasking CD player control utility. All three utilities cost just £5 from Jonathan at 21 Green Street, Milton, Northampton, NN7 3AT.

Risc PC dino-help

Acorn has provided The UK Dinosaur Society with a pair of Risc PCs fitted with 486 cards as part of a sponsorship deal. The society, which promotes scientifically accurate books on dinosaurs, says that in return, books will feature the Acorn logo. For more information on the Dinosaur Society UK, phone (01227) 700116.

Acorn User diary

Date	Event	Venue	Contact
21 – 28 July	World Conference on Computers in Education	Birmingham International Conference Centre	WCCE95: 0121-428 1258, e-mail: wcce95@cs.aston.co.uk
9 Sept	ARM Club open day	Leicester High School for girls	The ARM Club: 0181-624 9918
27 – 29 Oct	Acorn World '95	Wembley Exhibition Hall 1	Ticket hotline: (01933) 441448



Log on, hook up or plug into the Information Superhighway. Whichever way you want to enter this new world, Acorn World '95 promises to be the best event of the year. Come and get real, hands-on experience of all the latest desktop products. Learn from the experts at the live theatre presentations. See the revolution in home services being created by Acorn's "Set-Top Box" technology. Plus jugglers, face painting, a games arcade, competitions with prizes. A FREE crèche and over 100 exhibitors showing what's new and exciting in the world of IT.

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Acorn

The Formula 1 package for original painting and photo-retouching. Studio24 leaves the competition at the starting grid with its power and performance. The FREE updating service ensures that once you join the Pineapple team you will never have to pay for the latest model!

Studio24



This picture is original artwork produced using Studio24 by Walter Briggs of Kingfisher Graphics

A demo version of this package is available together with many example pictures and a complete copy of the manual. Price £5.87 inc vat (Refundable against purchase of the full package)

Full Package Price
£146.87 inc vat

Stop Press!! - Vers 2 coming soon - buy now at vers 1 price and receive free upgrade to version 2

Virus Protection Scheme

The Pineapple Software Virus Protection Scheme provides the most comprehensive protection available against computer viruses. !Killer together with VProtect will detect and remove all of the currently known 71 families of virus (over 100 viruses in total). Because new viruses are being discovered all the time our virus protection scheme will provide you with 3-4 updates of the software each year. We can also offer immediate advice by 'phone. !Killer can scan any filing system or device including floppies, harddiscs, networks, even CDRoms. All types of compressed file can also be scanned. All infected files are fully restored without having to reload from master discs or backups.



Don't wait until you discover you have a virus! Use the software that Acorn themselves use to check for viruses.
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Acorn Computers



We are fully authorised Acorn dealers and we can supply all Acorn computers and upgrades at very competitive prices, usually by return of post. All Acorn computers are supplied with free membership of the Virus Protection Scheme and a special offer on our Studio24 painting package of just £94.00 inc vat.
Please see our other advert for details of computer prices.
We can also provide professional advice and assistance to help you choose the right Acorn system.

A4 Colour Scanners



New from Pineapple the superb IX-4015 A4 flatbed Canon colour scanner. Supplied with Imagemaster and Twain software this scanner makes the perfect companion for our Studio24 re-touching software. With a basic resolution of 400 x 800 dpi this scanner is unbeatable value.

IX4015 with Imagemaster & Twain	**£675.00**
As above + Studio24	**£769.00**
SCSI interface + cable	**'phone**

Epson Colour Scanners

Also supplied with ImageMaster and Twain software these models can work on either SCSI systems or via the Parallel Port. Basic resolution of GT8500 is 400dpi and the GT9000 is 600dpi

GT-8500	**£599.00**	**GT-9000**	**£733.00**

Pineapple Software
Suites 13 & 14
South Park Business Centre
310 Green Lane, Ilford
Essex IG1 1XT
Tel 0181 599 1476 Fax 0181 598 2343

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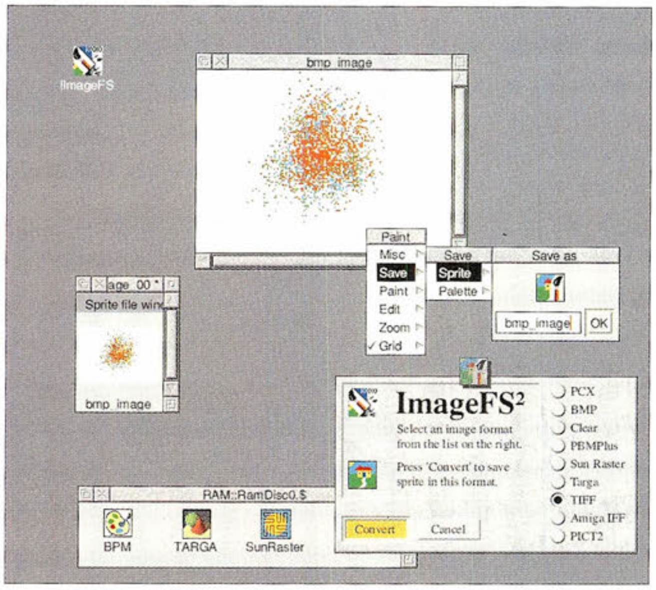
For demonstrations of most of our advertised products why not come and visit us in our new offices (easy parking) where you can see most of the Acorn range of computers and other hardware in action.

Graphics

No other alternative

ALTERNATIVE Publishing first released *ImageFS* well over a year ago with the intention of making bitmap file importation easier than swimming with armbands. The program certainly lived up to expectations with all the ingredients of a *cordon bleu* file filter; fast in operation, quick to load, seamless in action, but not all that expensive.

There's always room for improvement though (those immortal words of my old chemistry teacher finally finding a use), and Alternative Publishing has most definitely not been resting on its laurels regarding *ImageFS*. The program now handles everything under the sun, including Sun 1/8 bpp uncompressed files (to name but one of the common rarities of image file floating around out there in cyberspace or the infobahn, or whatever it's called – call me confused but I really feel there should be a filter for this crazy jargon business too).



Seamless importing and easy file conversion when saving with *ImageFS²*

The program, which stands at version 1.61 at the time of writing, is an alpha test version of the forthcoming *ImageFS²* which should be with us shortly. Despite being at such an early stage of development, its improvements already work competently. Some of these include very powerful and well-designed interface features when saving, importing and previewing files. When saving, Alt-drag elegantly opens a window, in a very Mac-esque manner, providing simple conversion to all sorts of file formats including PCX, BMP, Clear, PBMPlus, Targa, AmigaIFF and many others. Of course, the industry standard GIF and TIFF formats are also offered and all these converters work for importing as well. Still unfinished is *TinyView*, a 200x200 or 400x400 pixel preview facility which works by Ctrl-double-clicking on any supported bitmap file – including sprites of every variety – opening an attractively designed window with the sprite inside. If you like what you see, you can drag the image directly into a bitmap editor or DTP program.

This program is a definite must for those dealing with lots of wacky bitmap formats, and I wouldn't be surprised if something similar for vector or DTP files was also to find its way to our desktops.

Alternative Publishing
Tel: 0141-248 2322

Pic of the month

BENJAMIN Shimmin of Bolton is this month's winner, coming out on top of a number of excellent entries which will be carried over into future Pic of the Month competitions. Benjamin – who is 12-years old – produced this, and two other images also inspired by food, using *ArtWorks*. They were sent as sprite files, however, so the full resolution could unfortunately not be printed. Despite this, the image still shows very good draughtsmanship and colour sense.

Another well-deserved £20 leaves our hands and makes its way, this time, to Bolton. Next time it could be your neck of the woods, but please remember to send in your sprites, JPEGs, *Draw* files, *ArtWorks* files, *Composition* files, whatever you fancy, with a little explanation and your name and address on the disc. JPEGs are best for huge sprites and the original vector files for vector work.



Compo out now

A beautifully boxed and manualled *Composition* package found its way onto my desk recently. It must be said that Clares has done it again with its packaging which really has become the leading edge in the Acorn platform.

After weeks of use, I have not been able to find any bugs in the final pre-release, so one can be fairly certain that only freak mishaps will interfere with the full release. *Composition* is an extremely fast, fully-layered image workbench but as it is unchanged features-wise from the last pre-release, it lacks something in ease-of-use.

Compo is an object-based image manipulation package, not a bitmap editor with layering, so all functions should be mouse operated and previewed on the fly, just like packages of similar nature on the Mac and PC. This is not yet the case for *Compo*. I know Clares is determined to drive the development of this package which has a fast and powerful foundation. The future bodes well for this package, and so looks brighter for the Acorn graphics user.

Clares
Tel: (01606) 48511

Top tip

A small tip for those using *Impression* for DTP with the intention of getting the document imageset for professional printing: when loading *ArtWorks* or *Draw* files into a frame, make sure the original file is of a reasonable size. Dropping in an image or clipped chunk of image which is very small and then having to enlarge it by over 500 per cent in *Impression* will possibly give positional problems on some printers and imagesetters, so simply enlarge small images before importing them.

Contacting me

You can contact the Graphics page by writing to me, Jack Kreindler, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: jack@acornusr.demon.co.uk.

Termite Internet

Have you surfed the Internet yet?

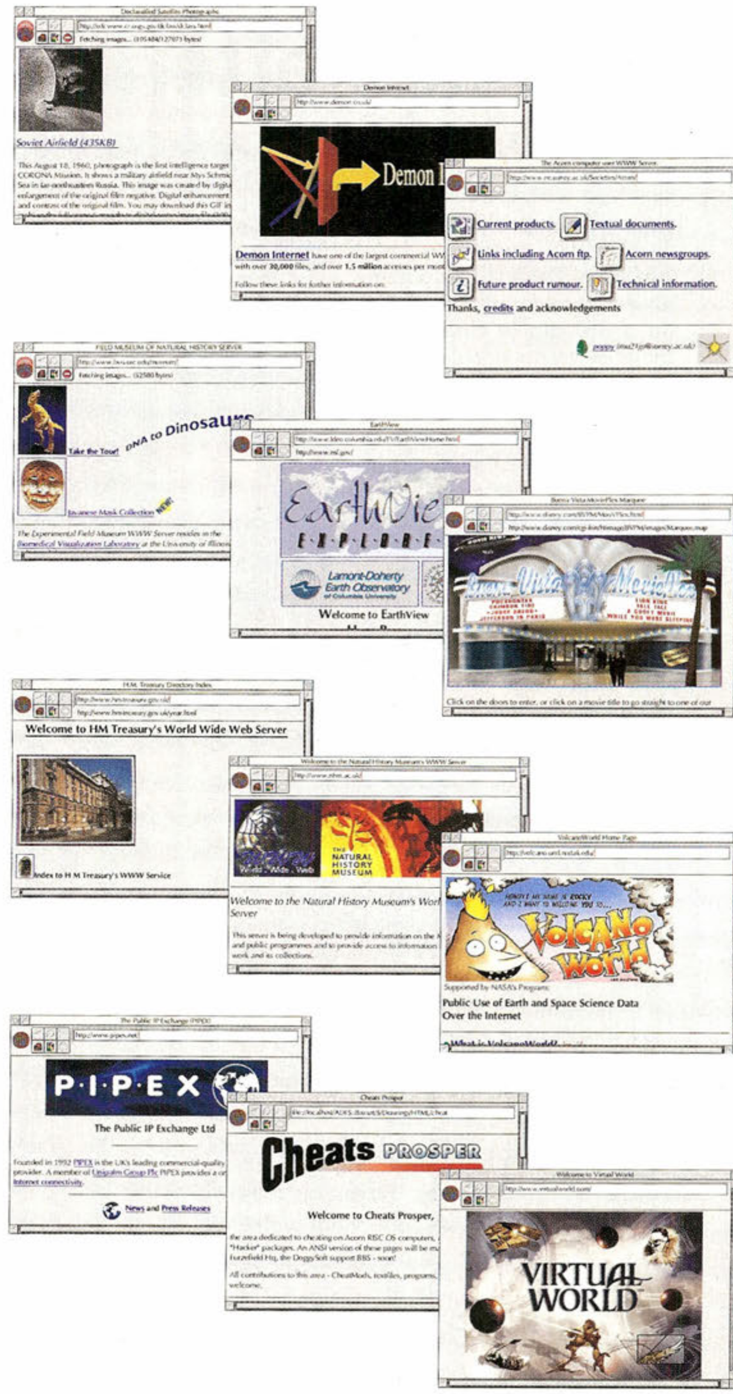
Termite Internet provides access to all the major facilities of the Internet with the minimum of fuss, and absolutely no cryptic commands. Instead, a descriptive control panel is utilised to make your entry to the Internet as painless as possible. Clicking on the icons opens icon-based interfaces, from a live clock face to show the time, to extensive WWW browsing facilities.

The *World Wide Web*, a relatively new feature on the Internet, allows you to jump to any site on the Internet and view interactive text and graphics. Most of the world's major companies provide WWW sites so that you can see details of their products and services, but the majority of pages are general information made available because of their authors' interests or hobbies. There is information on virtually every topic imaginable on the WWW, a selection of which is shown opposite.

The Internet is a global network of hundreds of smaller networks. Hence, no organisation owns it as a whole. Most of the component networks are run by corporations, governments, and academic institutions, but some (known as *Internet providers*) allow single users to connect to the Internet using a computer, modem, and suitable software.

Although you can view information from anywhere in the world, all you have to pay is the phone call to your Internet provider (which is usually a local call). Even your mail which could travel hundreds of miles doesn't cost you more than the call cost for the time it takes your message to go from you to your provider — just a matter of seconds!

For more information on Termite, Termite Internet, modems and how you could be connected to the Internet — send SAE suitable for a disc to our address below.



£79.95

Plus £3 p&p. Upgrade from Termite (non-Internet) £30. Credit cards accepted.



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Furzefield Road
Beaconsfield
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United Kingdom

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Data: (01494) 681711
(Support BBS)
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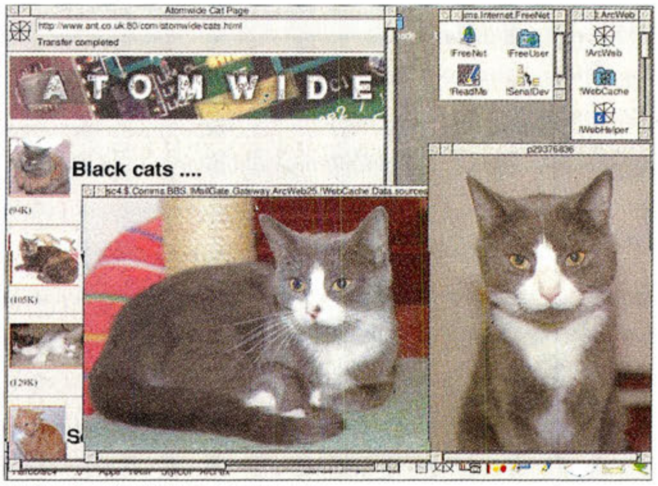
E-mail: support@doggysft.demon.co.uk
Web page: http://www.u-net.com/~doggysft/

DoggySoft

Paws for thought on the Web

THIS month I was going to shout the news from the rooftops that Acorn Computers' own World Wide Web service was up and running, but at the time of writing, it is not. This is a pity, because the demonstration at the *Acorn User* show featured a really excellent home page designed by Acorn's new WebMaster, Paul Lebeau, which I'd like to show you. Maybe next month?

So instead, here are some pictures of cats – Atomwide cats to be precise. These splendid creatures are featured on a sub page of the Ant Ltd World Wide Web server in the Atomwide Ltd section. If you have ever visited the Orpington, Kent headquarters of Atomwide Ltd for Acorn repairs or state-of-the-art upgrades and accessories, you will know that while you are being served, you are just as likely to end up nursing a cat as a computer.



WebCats waiting for the next page?

The Ant Ltd World Wide Web server software responsible for this page is expected to become part of the forthcoming *Ant Internet Suite*. It was my experiment with *FreeNet* and *ArcWeb* (see below) that fetched this page, and it's interesting to note that any Internet client software written to work with *FreeNet* will be entirely compatible with the *Ant Internet suite*, so your favourite *FreeNet* Internet Relay Chat software will work with either package. I understand that *Termite Internet* from DoggySoft unfortunately does not have this compatibility, but no doubt modules for such functions will become available from their support BBS Furzefield HQ.

Competition can only enhance the quality of products available in this burgeoning market. Will we be able to afford the phone bills though?

Making the connection with FreeNet

I SURPRISED myself this evening by actually getting *FreeNet*, the freeware TCP/IP stack modules for Acorn 32-bit computers produced and ported by Tom Hughes, to work with Stewart Brodie's World Wide Web browser, *ArcWeb* version 0.19. This means we no longer need to have *TCPIP* (aka *KA9Q*) from the Internet Starter Pack running as well before surfing the 'net, and *ArcWeb* seems to run faster too. If I can do it, so can you!

Until other *FreeNet*-compatible clients have been produced, we'll still need *TCPIP* for the normal ftp, telnet, news and e-mail, and very good it is too for a combination package. But as parts of the *FreeNet* package are by Adam Goodfellow, one of the guardians of *TCPIP*, the setting-up of *FreeNet* has some familiar features.

Enquiring owners of existing Demon Internet accounts should have little trouble in getting to the same stage as I did. All I did was download the *FreeNet* archive from the Demon ftp server's *pub/archimedes/developers* directory, and substitute my own Demon account name and IP address for Tom Hughes' account name 'compton' and his matching IP address in the various files.

I entered the IP address of the Demon gateway machine in the *Startup* file as described in the accompanying documents, and the name of the block driver, serial port number and Modem speed, copied from those in *TCPIP*.

This is probably not the best way to configure it, but it worked. I adjusted my *SlipDial* script to load the *FreeNet Startup* file instead of *TPCIP*, and ran *SlipDial*. When the Demon HELLO window appeared, I ran *ArcWeb* and off I went surfing. If you don't feel like experimenting, by the time you read this there should be a desktop utility available to ease this configuration process.

But don't whinge about things being complicated to set up. Isn't there any sense of adventure left about trying and succeeding to make a first contact? I remember the sense of triumph and elation years ago on my first successful connection to Archive BBS that it was actually me that was online.

Devon Trinity

Trinity BBS in Exeter, Devon, is one of the few in Southwest England with an Acorn area. It's a PC system run by John Burden, the area's FidoNet Co-ordinator. The BBS forms part of the echomail 'backbone' message distribution system, also giving users access to Internet e-mail and newsgroups. Co-sysops Alex Howarth and Neil Bullock have the job of expanding and developing the Acorn section and welcome new callers and comments. Trinity BBS has two V.32bis lines and a third for speeds up to V.34.

Trinity BBS
Modem to: (01392) 410210/412370 V.32bis or (01392) 495899 V.34

NewsFlash!

A new Shareware BBS software package for Acorn machines is in development by Chris Davis called *NewsFlash*. Although it is still in a very early version, *Newsflash* can be downloaded from Arcade BBS. It is worth looking at just to see the supplied example BBS called *OuijaBoard*, which has some very clever 3D-look ANSI menus. Watch out for further developments.

The Archinet

Another system dedicated to Acorn's range of computers has opened, this time located in Ashford, Kent. Ben Brown's The Archinet BBS, also runs *ArmBBS* on a Risc PC with a USR V.34 Sportster modem. Ben's system has over 117Mb of files to download and carries all the 'backboned' Acorn-interest Fidonet echoes. Archinet is online from 9pm to 7am seven days a week. The BBS is a full Fidonet node at 2:440/610.0, and *ArmBBS* is shortly to become fully FidoNet compliant.

The Archinet
(01233) 635436

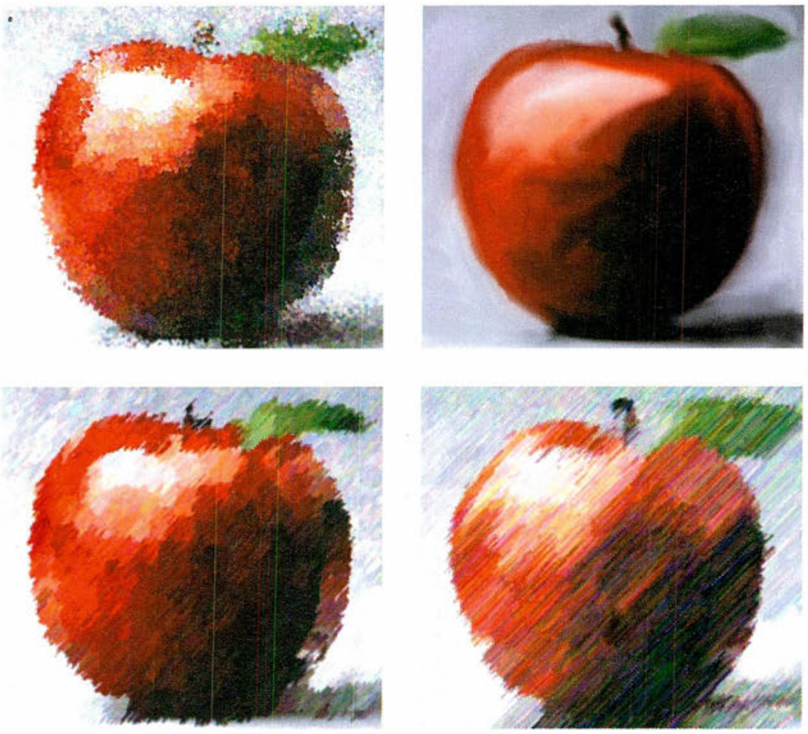
Contacting me

You can contact the Comms page by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

PRO ARTISAN

24

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ProArtisan 24 is the latest development in the hugely successful Artisan series. Designed specifically for the Acorn Risc PC, ProArtisan 24 exploits the enormous artistic potential offered by allowing the use of 16.7 million colours for image creation and display.

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Acorn Risc PC

A fact pack is available which includes a demo version of the software.

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Coping with photocopies

A COUPLE of people have asked me about producing school newsletters on photocopiers and the problems they've encountered using photographs and grey scale images. Unfortunately, photocopiers are really designed for producing black and white images and your photocopies are not so good at representing shades of grey. Most photocopiers suffer from an exaggerated form of dot-gain. Dot-gain is where two separate adjacent half-tone dots join together to form continuous black areas rather than a fine half-tone screen grey colour. This results in the greys looking much darker and photos looking very dark with details being lost as they fill in.

$$\textit{No of printable greys} = \left(\frac{\textit{printer resolution}}{\textit{screen ruling}}\right)^2 + 1$$

Figure one – a formula for calculating the number of greyscales available.

In order to counter this effect, you should make your images paler and add as much contrast as you can stand (more contrast means less subtle shades of grey and more definition) by adjusting the brightness and contrast. Remember that though it may look pale on screen, it'll look a lot darker by the time it's been through the copier.

Screening resolution

Another thing to note is that a standard printer like the Canon BJ10e produces great grey scales at a screen ruling of 45lpi (lines per inch) – however, your photocopier is far less likely to fill areas in if you set the screen ruling a bit lower, say to 30lpi.

Most newspapers still use 30lpi screens for their photos. This helps prevent dot gain and also increases the number of discernible greys you can produce since the number of greys depends on the relationship between the resolution of the printer and the resolution of the screen ruling.

The screen ruling helps to define how many dots make up a half-tone cell. The more dots per side, the more grey scales the cell can produce. For example, a 4x4 cell has 16 combinations whereas an 8x8 cell offers 256 combinations. Therefore, a 360dpi printer with a ruling of 90lpi gives half-tone cells of 4x4, whereas the same printer with a ruling of 45lpi gives cells of 8x8.

Figure one shows how to calculate how many greys are available, so by altering the screen ruling from 45 to 30 we gain some extra greys that help improve the appearance of photos. To create a visually convincing halftone image you need about 150 shades of grey so a 30lpi screen is ideal for a 300 or 360 dpi printer.

Other printers with greater resolutions and different screening methods will obviously respond differently; however most copiers only have an effective resolution of 300dpi or thereabouts, so although your 1200dpi Calligraph printouts may look great, the copier won't be up to the task of reproducing such good results.

The only way of determining the best printer setting is to run the same bit of paper through your printer a dozen times, printing the same image on different sections of the page, using different half-tone dot settings and line screen settings each time. If you then photocopy this bit of paper you'll be able to tell from the results which settings best suit your copier.

A set of grey samples printed using this method would help you to relate the 10 per cent grey you see on your screen to the colour it produces when photocopied. This also works with images such as photographs; have one image in your document which you move around as you feed the same piece of paper through your printer several times. If the image occupies one ninth of a sheet of A4, you can get 3x3 different images on the same sheet of paper to find the one that photocopies best.

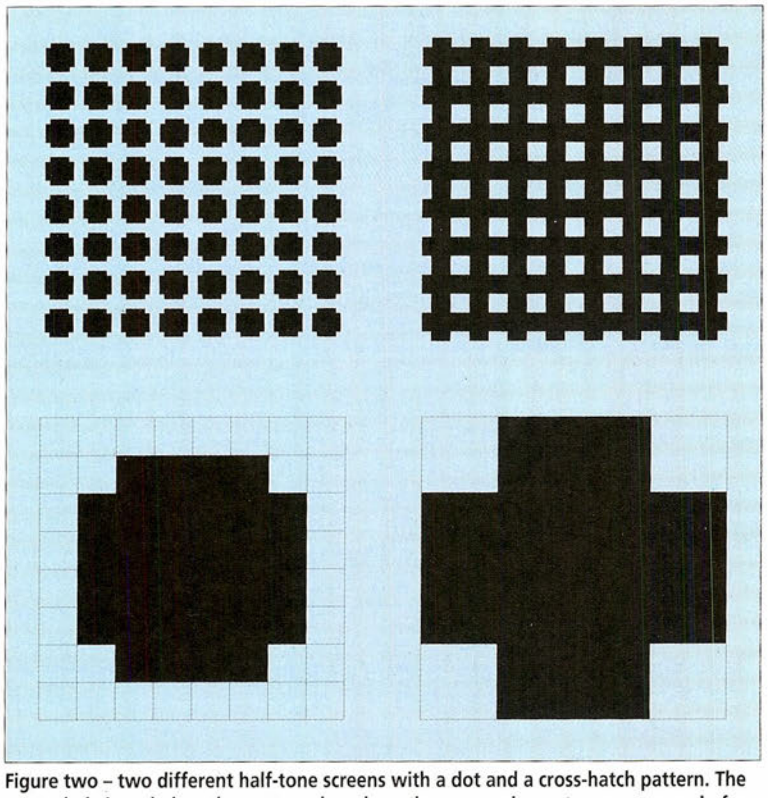


Figure two – two different half-tone screens with a dot and a cross-hatch pattern. The expanded views below the pattern show how the screen elements are composed of an 8x8 matrix of dots.

Half-tone screen shapes

Another habit common to many photocopiers is that they respond better to certain types of half-tone screens (a screen type describes the shape and arrangement of the halftone dots). The Canon *Turbodrivers* provide six different screen types. I find the cross hatch and Dot Screen to be particularly good for photocopiers, but your copier may think otherwise.

Just as less dot fill occurs with lower screen rulings, the type of half-tone screen will affect the degree of dot fill. Figure two shows two different types of half-tone screen, and how they are made up from dots.

Contacting me

You can contact the DTP page by writing to me, Steve Powell, at :

Acorn User,
IDG Media,
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Adlington Park,
Macclesfield SK10 4NP,

or by e-mail to:
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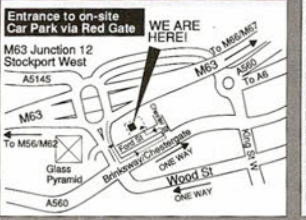
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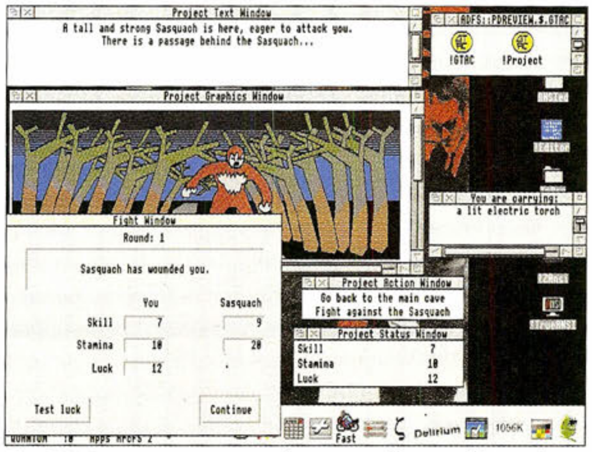
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Games designers

GAMES designers seem to be all the rage at the moment, and after recently featuring an arcade games designer, this month I'm going to cover two brand new adventure game designers.

The two programs in question are John Fairhurst's *MAD*, or *Micro Adventure* and Andrea Gallo's *Graphic Text Adventure Creator* or *GTAC*. Both systems aim to fulfil more or less the same objective, which is to allow the user to create a text-based adventure which runs in an easy-to-use windows-based system in the desktop.

In both programs, script languages are used to create the locations, monsters and objects within a game and how the player interacts with them. Some programming knowledge is required, but if you manage a bit of BASIC this should not present a problem. Both systems provide good documentation, with full tutorials and example games.



Use *GTAC* to create your own adventures mixing graphics and text.

In fact, I couldn't really fault either of these programs, except to say that the inclusion of the scripts used to create the example games would have been useful.

Providing a direct recommendation in these circumstances is a bit tricky, and I'd advise anyone interested in the subject to have a look at both systems before embarking on the design of their adventure masterpiece. The only significant difference in terms of major features is *GTAC*'s support for graphics. Both sprite and *Draw* file-based pictures can be included very easily.

A slightly cut-down demo version of *GTAC* can be found on GA60 from Five Star, with the fully registered version being available for £7 or 15000 Lire from: Andrea Gallo, 237 Viale Cortina d'Ampezzo, 00135 Roma, Italy.

MAD can be found on disc GA068 from The Datafile.

Five Star catalogue single-tasks

AS many of the other PD libraries have brought in desktop-based catalogue programs, Five Star has taken an alternative path with its single tasking viewer by Quintin Parker. Loading time is fast, and the application itself sits on the icon bar before exiting to single tasking mode when clicked on. The format is almost demo like, with a little scroll text and all interaction being icon based. All the usual features are there, including a fast search and the ability to calculate your order cost and produce an order form.

I don't think there's really much of a problem with the program being single tasking, but when browsing a catalogue I like the dynamic scrolling of RISC OS scroll bars. The Five Star program allows only fairly slow scrolling or a straight jump to the start or end of each catalogue section. That said, Five Star Marketing offers an interesting range of PD with many programs I haven't seen elsewhere. There are also a few exclusive budgetware programs and a good selection of bundled software packs.

Five Star Marketing
Address: 4 Shepherds Walk, Bushey, Herts WD2 1LZ



The non-Desktop cataloguing program from Five Star Marketing.

TypeFind

The excellent *TypeFind* application, which was reviewed in last year's August issue, has now been updated to version 2.01. *TypeFind* allows the easy identification of the file types of any files which are not type stamped. *TypeFind* is Shareware and a registered version can be obtained for £5 from Ben Schofield, 24 Debdale Lane, Keyworth, Notts NG12 5JD.

ARM Club CD-ROM

Yet another source of public domain on CD-ROM is soon to be made available by the ARM Club PD library. After the success of the Datafile's PD CDs, the ARM Club will be launching its own CD for only £19.95 at the Acorn World show in October. Further information and the usual ARM Club PD service can be found at the ARM Club PD Library, 19 Woodberry Way, London, N12 0HE.

Public domain CDs have to be one of the main 'automatic buys' for CD drive owners, and this latest addition can only be good for the user. Let's just hope there isn't too much of an overlap with the material found on existing PD CDs.

PD Scheme

Following the success of *Acorn User's* PD scheme in highlighting some of the best Freeware programs on the scene, I can report the imminent arrival of several new utilities and games which will be appearing on the cover disc in the next few months. Development of *Acorn User's QTM* tracker player has also been in hand, with a major new release expected soon.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or (preferably) by e-mail to quantum@digibank.demon.co.uk or online on the Arcade BBS.

Hintz for Colton userz

HERE are a few helpful hints for users of Colton's range of programs, which your business editor has found useful:

• Using a graphic in your letterhead will take up a considerable amount of disc space if it is embedded. To stop this, 'untick' the 'Embed pictures' option in the Choices window. Note, though, that the file will remember where the graphic is by its pathname, not by its relative position, so if you move the file to a different machine the reference will be lost.

Fortunately, you can re-find the graphic, and the program will not forget the reference when saved again.

• Always have a copy of Minerva Software's *Flasher* on the icon bar as the *z*-family, quite correctly, does not flash its own cursor.

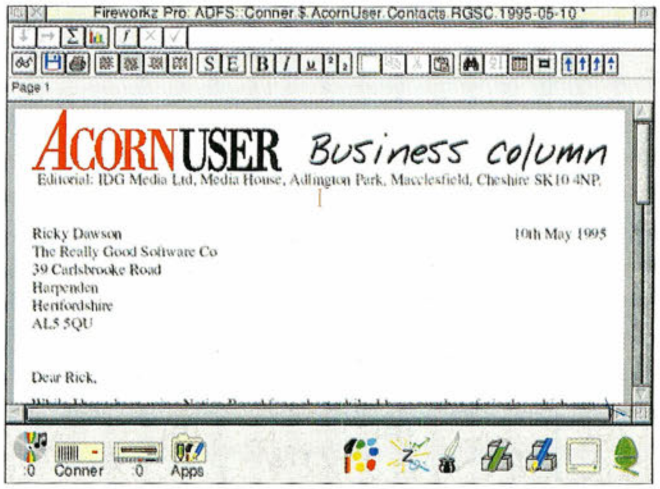
• If you have been working on a very large document and then want to do something smaller, quit and reload your *z*-family program first. This is because they don't give memory back to the operating system; hopefully Colton will rectify this oversight soon.

• Don't always rely on the 'Fit' option in the View Control window as this only fits to the nearest five per cent. It is often better to click on it and then up the number given by a few per cent to, say, 103 per cent.

• If you have RISC OS 3.10 or 3.11, ask your local dealer for a copy of the latest version of the font manager as the one in ROM does not auto-kern letters as well.

• Make use of the 'Print scale' option from the Page menu. This allows you to scale large worksheets taking many pages so that they are printed on just one page.

• If you want to transfer data between Acorn and PC versions of the *z* family, it can be a good idea to make sure that any *Draw* files have had the text in them 'converted to path.' By doing this it will not matter if there is not an identical typeface on the other machine. Keep sprites to an absolute minimum as the colours do not appear to convert properly. Don't use hard spaces in filenames as PCs don't particularly like them and remember to keep your filename to eight letters plus the extension */fwk* (or */fwt* if it is a template file). If you use sexed quotes, these will appear incorrectly when viewed and printed on a PC. Finally, don't set font widths as these don't function correctly when transferred between platforms.



The *Acorn User* logo here is not stored within the file, saving on disc space, especially for multiple copies of the document.

Confusing standard

OCCASIONALLY I notice something which seems downright illogical. I have observed quite a number of people getting really frustrated using a Risc PC simply because when some buttons on the keyboard are pressed, something else happens.

For instance, all PC users and I would expect the End key to move the caret to the end of a document. But no, it deletes the character to the right. Similarly, the Delete key actually does the same as backspace, whereas it should delete (i.e. erase the character to the right of the caret).

Acorn itself is not happy with this. The Acorn Style Guide (which was written before the Risc PC was born) confirms this. It says that 'in the future, non-proprietary PC keyboards may be supported' and goes on to say that the functions of the forementioned keys should change to the same as on any ordinary PC. Will the next release of RISC OS address this problem?

Making a professional Impact

INITIALLY confusing, *Impact Pro* from Circle Software actually provides a flexible database package at a very low price, once you have got the hang of it. The databases that *Impact Pro* creates look like any RISC OS window and reporting is done via *Impression.*

The package is relational (see the Business page, June 1995 for a definition and an explanation of why this might be useful) and at £65 + VAT, you can't really grumble. If you can afford it, *Recordz* might be a better bet, though this isn't a relational database.

Circle Software
Tel: (01793) 770021

Clan corner

I was most surprised at one of the results of a survey among Clan members. Apparently, out of the small percentage of members who had participated, over three quarters felt it was fair to pay for a technical hotline, with a system of charging for its use. I always check before purchasing software that there is no support charge.

Incidentally, I would recommend that readers *do* join the Clan as a number of software houses give discounts off their products.

Clan Acorn
Tel: (01223) 254448
E-mail: clan@acorn.co.uk

Really good displays

The Really Good Software Company's stand at the recent *Acorn User* Show showed that *Notice Board*, the company's presentation graphics package, really can produce good presentations. Since its launch last year, it has been given a major re-write and a number of new features have been added.

The package allows *Draw* or *Artworks* files to be cycled, though, accompanied by a good number of fades.

The Really Good Software Co
Tel/Fax: (01582) 761395

SQL for DataPower

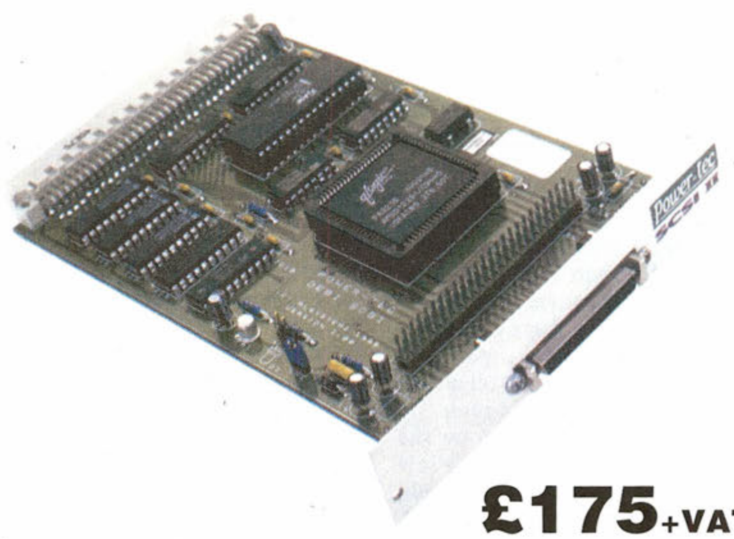
The database market is continuing to hot up. The imminent *DataPower 2* is going to feature a structured query language (SQL). According to Iota, a considerable amount of the money from the Windows and Mac OS versions of *The Complete Animator* will go towards development of *DataPower* on the Acorn platform.

Iota Software
Tel: (01223) 566789

Contacting me

If you have any hints and tips for any business-related products, or you have some news to share, why not drop me, Alexander Singleton, a line at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: alex@acornusr.demon.co.uk.

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Alsystems, 47 Winchester Road, Four Marks, Alton, Hampshire, GU34 5HG, England. Tel: +44 (0) 1420 561111. Trade Enquiries Welcome.

Education

Information Technology for parents

HANDS up all parents who are concerned that their children are more IT aware than they are. Half of those who have their hands down are probably too ashamed to admit it, but there is now a solution which has been provided by Allister Duncan. In his work as an Information Technology co-ordinator and network manager, Allister discovered many parents wanted to know more about Information Technology, but there simply weren't the opportunities. So, working from his school, Allister began Information Technology for Parents. Aimed mainly at parents of children aged between three and 11 years, the cost of a course is £12 per person, which assures a computer each, or £6 each if parents share a computer. You do not have to be a parent of a child at Allister's school to attend the course.

Parents will be able to use exactly the same kit as their children will use in school. The hardware includes a network of Acorn computers, some stand-alone Acorns, a scanner and a wide variety of printers. The software library donated by software houses looks very impressive indeed.

If parents have a couple of hours free on a Monday evening or a Saturday afternoon, give Allister a ring and book a course. Alternatively, a booking form is on this month's cover disc in *Impression* and text formats.

Information Technology for Parents
Tel: (0589) 284113 (day)
or (01932) 563189 (evenings)

Dumfries agrees with me

THIS month, I'll unashamedly blow my own trumpet. In the last month's issue I was extolling the virtues of CSH's new CD-ROM *The World of Robbie Burns*. Not necessarily as a result of reading that article, Dumfries has standardised on Acorn computers and has purchased over 100 Acorn-compatible CD-ROM drives mainly because of the Burns CD-ROM. Apple? PC? Forget 'em! Acorn is the platform for education.

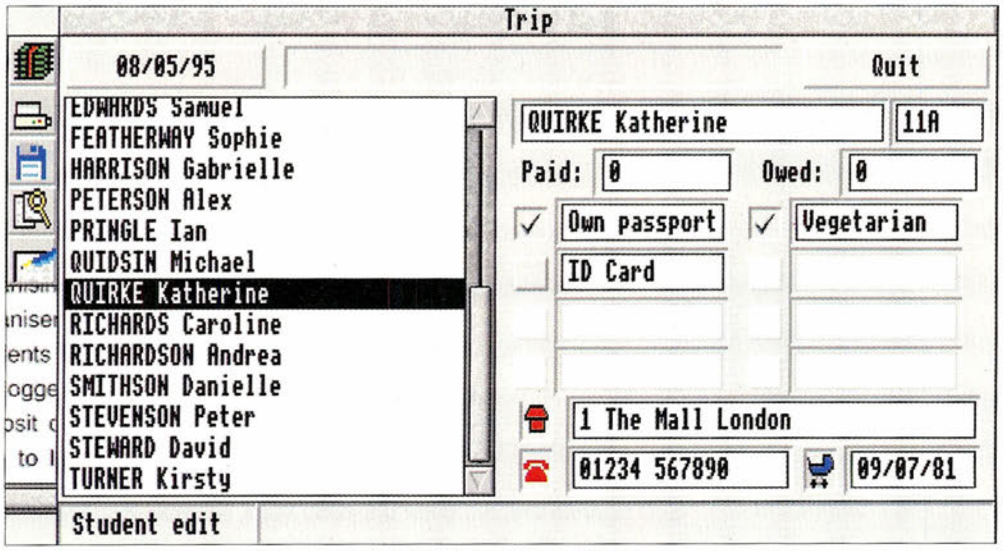
Help for organising school visits

TAKING children on school visits is an important part of their education. But as any teacher who has organised a trip will tell you, it can be a logistical nightmare, especially if the trip involves going abroad.

Fortunately, Creative Curriculum Software has come up with a product which may help. *Trip* is a program designed to ease the job of organising a school trip or outing. As well as allowing the organiser to record and print out passport details of students taking part, *Trip* allows all individual payments to be logged and printed out. With information about the deposit dates entered into the computer, the program is able to list students with any balance outstanding on a particular day.

This program is also useful as a sort of checklist to ensure the teacher has done everything required like medical details, special diet etc. *Trip* costs £14.95 for a single user and £89 for a site licence.

Creative Curriculum Software
Tel: (01422) 340524



This program from CCS will take away some of the chores of organising a trip.

Networks in education

Welcome to Bill Lamin who is Director of Information Technology at Pool School and Community College in Redruth, Cornwall. He also has some very sound thoughts on minimum hardware standards. Read his article and find out how to get special deals on upgrading your schools' computers.

More jargon

My comments about filer jargon in the April issue touched a raw nerve – almost as much as a previous broadside about clip art. Thank you to all those who responded with a wide assortment of fixes, all of which involved loading files/modules/programs of anything between 6K and 42K! Not bad for one or two computers you might think, but 50+ computers all loading up an extra 42K across the network will add to the power-up time quite significantly. While I am grateful for these solutions, I still feel that these are problems which shouldn't need to be fixed because they shouldn't be there in the first place. Are you listening, Acorn?

On the cover disc is Russ Juckes' solution which places a 6K module called *NewMsgs* in *System:Modules*. Full instructions are included. I tackle the problem from another angle and ensure that each computer knows where each application is (or at least the important ones) by adding a few Filer_Boot instructions into the existing boot sequence. This is also included on the cover disc.

Apologies

Back in the April issue, I wrongly credited *Kingfisher Micropedia* to ESP rather than ESM, who actually sells the CD-ROM (although the phone number given actually was ESM's). Apologies to all concerned.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to GPreston@arcade.demon.co.uk.

Networks

NetView updated

Shades of 1984 with *NetView*.



SANJAY PATTNI'S *NetView* has just been revamped and is now compatible with the Risc PC. The program allows a user to view another user's screen and send messages to one, any, or all users. One apparently insurmountable problem is that you can't view a Risc PC screen from a non-Risc PC if the Risc PC is in a mode not supported by the viewing computer (for instance, if you're on an A5000, you can't view a Risc PC if the Risc PC is in a 32,000 colour mode, because the A5000 can't handle that mode).

Apart from that, the software is much faster when transferring screens across the network and sending messages to users. This is a very useful program for managers who control a network which extends beyond a single room. I frequently use it to view what a student is doing in another part of the school, then send a message to help the student solve a problem. It's also handy to send a message to all students on the network telling them it's late and you want to go home!

Sanjay Pattni
Tel: 0181-568 9167

Tip for the month

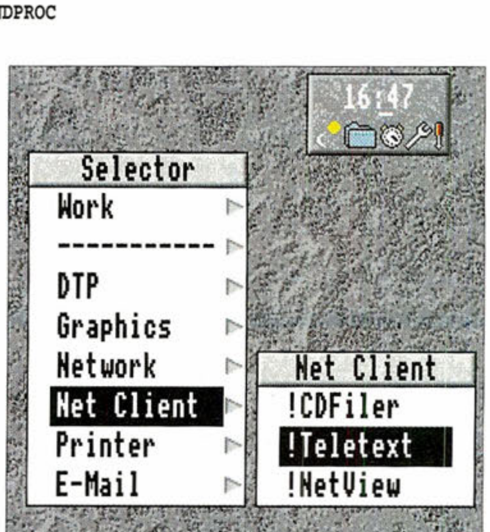
AS hard discs get cheaper and large capacity drives are therefore within the budgets of many more schools, ever increasing numbers of applications become available to clients. This, in my opinion, is a good thing, but some will find it difficult to wade through complex directory structures to load the applications they need. SEMERC's *Front_End* (see news last issue) is one solution, but is more suited to primary schools.

For older students, an answer may be found on the CD-ROM on the cover of April's *Acorn User*. In *$.AcornUser.Discs. AcornComp.Cover.9410. Reader.TidyClock* is an application called *TidyClock* which includes a customisable program locator. If you're going to place this on the read-only area of the network, you'll need to prevent any attempt at saving the configuration because it will crash the program as it will be trying to save to a read-only medium. To do this, load *!RunImage* into *Edit* and search for

```
IF ms%=5 PROCsave_prefs
```

Change this line to:

```
IF ms%=5 ENDPROC
```



TidyClock includes a customisable program locator to ease the finding of programs hidden deep in a directory structure.

Tape or disc backup?

IT is the responsibility of the network manager to backup user areas regularly. What's best – tape or disc? This is a difficult question to answer briefly but, flying in the face of industry convention, I'd say disc. Certainly for schools, disc has two major advantages over tape. Firstly, it is much easier to restore the odd lost file at a moment's notice – as is frequently the case when a student has accidentally deleted a piece of work that's due to be handed in yesterday. Secondly, I can take the backups home to mark work.

I am, of course, referring to removable hard discs. I use SyQuest drives (one at school and one at home) and find that I can fit a whole year group onto a single 105Mb disc. However, it's not a perfect solution because backing up can be stopped if, for example, between two backups a student renames a file and then creates a directory using the same name as he or she previously used for the file. The computer will stop the backup with the message 'Can't create file as it already exists as a directory.'

Another problem arises from the computer encountering open files. This is usually caused by students not closing down a datafile correctly and just switching off. However, there are people currently writing software to solve this and other problems related to backing up user areas onto disc.

At the Acorn World exhibition in Harrogate, Cumana showed off its new drive. It's a Panasonic unit that will read conventional CD-ROMs, but is also capable of read/writing to a disc which looks similar to a CD-ROM, but is an optical disc. For the more technically minded, refer to Ian Burley's article on page 13 of the June issue. The whole kit, including SCSI 2 interface, will be less than £700, with additional 600Mb disc costing about £40. This should make an excellent backup device.

Cumana
Tel: (01483) 503121
Fax (01483) 451371

Contacting me

You can contact the Network page by writing to me, Geoff Preston at Acorn User, IDG Media Ltd, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to : gpreston@arcade.demon.co.uk

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_80MB HD system	799
120MB HD system	809

A4000 (AKF52 14")

210MB HD system	849

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Cover disc

Elite

Author: Hybrid Technology

ANYONE who's ever been into games will know about *Elite*. It's the best-selling Acorn game ever, and those of us who spent the wee hours zapping evil space pirates and surfing the solar waves when it first came out will understand why.

Elite will work on any Acorn machine, even 1Mb RISC OS 2 machines. Full instructions are included in the *Manual* directory, which contains ten text files which, together, make up the game manual. Here we concentrate mainly on flying your ship, which is skimmed over in the manual. There's also a keyship for the game supplied as a *Draw* file, which you can print out and use.

The text file *!Loading* gives full information on loading the game, changing preferences and saving commander files, but for now you can just run *Elite* by double-clicking on the *élite* application, so it installs on the icon bar. Those with RISC OS 2 will need to make sure their system folder contains the *CLib* module provided in the *System* folder on the disc.

Those with Falcon Analogue Joysticks can use them with this version of *Elite*: details can be found in the *Falcon* directory. *Elite* can also be used with the standard joystick ports on the A3010.

If you have a Risc PC then *Elite* will run, but it will be faster than normal. *GameOn!* from The ARM Club sorts this problem out, as well as fixing loads of older games to work on the Risc PC: you can contact them on 0171-624 9918.

Playing Elite

Elite is set far in the future, when eight galaxies have been colonised by the Galactic Co-operative. You have just passed your space pilot's exams, and when you start the game you are sitting in your ship – a Cobra Mk III – in a space station, orbiting the planet Lave.

In *Elite* you can fly your ship around, firing at anything you see, and jumping through hyperspace between planets in the galaxy. As all this costs money for fuel and so on, you need to make money by trading goods between planets: each planet has a different stock market price, so you can make a tidy profit – or loss – by trading commodities. As you earn more money, you can buy more equipment for your ship – such as better combat lasers, fuel scoops and so on – and so improve your effectiveness in combat.

At the end of the day, the object of *Elite* is to destroy so many enemy ships that your rating goes up to *Elite*. Initially you are given the rating *Harmless*, and as you destroy more and more ships, asteroids and so on you progress through *Mostly Harmless*, *Poor*, *Average*, *Above Average*, *Competent*, *Dangerous*, *Deadly* and finally

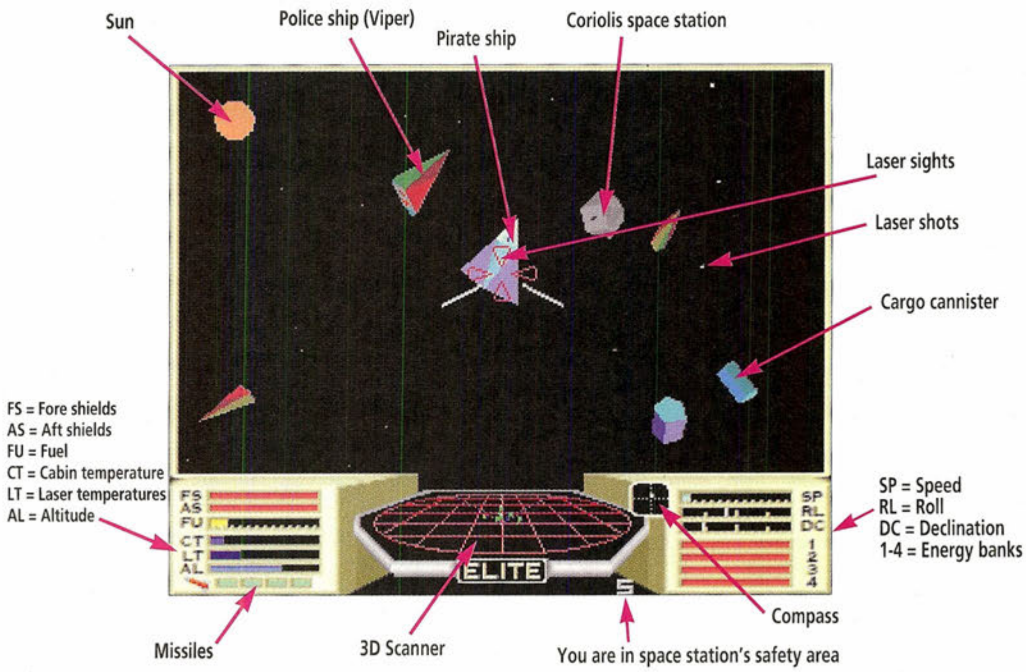


Figure 1: Flying your Cobra Mk III

Elite. Don't be fooled: to get to *Elite* rating requires months of dedicated play, but there's so much to see and do on the way the journey is worth it.

Flying your Cobra

When you first load the game and click on the *Elite* icon, you are presented with a swirling mass of stars – click once with Select to enter the game proper. You can now see your status displayed: this shows where you are and where your hyperspace is locked onto (Lave), the fact that you are docked, your fuel (seven Light Years), how much money you have (100 credits), your legal status (Clean) and your Combat Rating (Harmless). As you progress through the game these values will all change, as will the equipment listed at the bottom of the screen.

At any time in the game you can return to the Desktop by pressing F12 or clicking on the DESK icon – try it now. To return to the game just click on the *Elite* icon and you'll be back where you were before pressing F12.

First, let's try some flying. This takes some serious getting used to, so don't expect to be competent for some time. Before doing anything, make sure your Caps Lock light is lit on the keyboard – if it isn't, press Caps Lock). This switches on 'damping mode' (don't worry what that means) and makes flying much easier.

To leave the space station, press F1 (or click on LAUNCH). You will fly through a tunnel, and come out into space: *don't panic!* Start by pressing the middle mouse button until your speed – shown by the SP indicator on the top-right of your controls panel – is zero. Now, you're hardly going anywhere, so you can't crash.

Take a look round your controls, as detailed in Figure 1. One of the most important navigational controls is the Compass, located next to the speed indicator. This shows the position of the space station (if you are within the space station's safety area, shown by the S at the bottom of your control panel) or the planet (if there is no S). If the dot in the compass is white, then the station is in front of you, and if it is red it's behind you.

The position of the dot within the compass shows if it is to the right, left or whatever. Try rotating your ship so the dot is white and in the middle of the compass: you should see a Coriolis space station right in front of you, silently spinning against a backdrop of stars. Now try rotating yourself so the dot is in the middle, but is red, and then press F2 to look out of the back of your ship. There's the station again.

Now press F1 to go back to forward view, and experiment with moving around. The right mouse button speeds you up, and the middle one slows you down. This is a good time to experiment with your 3D scanner. If you crash into the planet (you'll know if you're getting closer because the AL reading will go down) or the space station, you'll die, but don't worry, there's plenty of time for practice. By the way, the left mouse button fires your laser: try it out, but if you fire on the space station, it will send out loads of police to get you...

What next?

Trading is covered in detail in the file *7Trading*, and flying between planets by hyperspace is covered in *3CobraIII*. You can only buy and sell when you are docked, and you don't know prices until you have arrived at a planet, so you're not guaranteed a profit until you've actually done the trip.

If you want to get into the game more quickly, without doing too much trading, then the commander file *Gisburne* has more credits and a high combat rating. To load this, just double-click on it in the Desktop, and then click on the *Elite* icon as usual.

When you've tried a bit of flying, and maybe a bit of hyperspacing, do read the manual through. It contains a lot of little clues which are invaluable later on in the game when you are set missions to prove your worth. Next month we'll let you into a number of secrets about the game, but in the meantime, happy shooting!



A well-equipped ship is an essential in any combat situation. Buy with the Adjust mouse button, sell with Menu.

Keys used in the game

WHEN DOCKED	
F1	Launch into space
F3	Trade
F4	Buy equipment
F5	Galactic chart
F6	Local chart
F7	Data on system
F8	Status display
F9	Hold contents
F10	Trade prices
F12	Return to Desktop
WHEN FLYING	
F1	Front view
F2	Rear view
F3	Left view
F4	Right view
Esc	Launch
J	Jump space
H	Hyperspace
C	Turn docking computers on (when fitted)
D	Turn docking computers off (when fitted)
Ctrl-H	Galactic hyperspace (when fitted)
T	Target missile
U	Un-target missile
M	Fire missile
E	ECM (when fitted)
Tab	Launch energy bomb (when fitted)
Delete	Jettison cargo canister
Caps Lock	Toggle dampers

Disc information

ELITE is not the only program on this month's disc – our regular features and the final part of the Internet Starter Pack appear as well. More details about these can be found in the *!Help* files on the disc, and in other parts of the magazine such as the C for yourself article and ✱INFO.



The majority of our survey responses suggested that readers wanted more software packed on the cover disc. In order to do this, we have removed the *Menu* program.

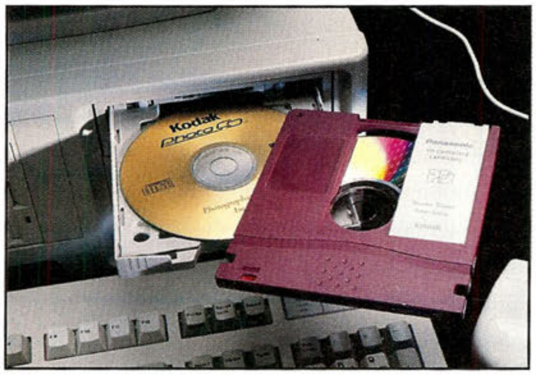
RISC OS 3 users will be presented with the usual display of icons; they can open the archives by double-clicking upon them (this is the equivalent of the 'View' option in the *Menu* program). To get help on an archive, RISC OS 3 users should choose Help from the App. 'Appname' submenu obtained by clicking with Menu over the archive icon. RISC OS 2 users will have to work slightly harder. They should first run *ArcFS* to uncompresses the data in the archives. Double-clicking on an archive will open it, revealing a *!Help* file, a *!Run* file, a *!Sprites* file and a directory containing the archived data. Loading the *!Help* file into a text editor will give information on the archive contents. *Elite* will run on RISC OS 2, as will many of the programs in the ✱INFO section.

If your disc is faulty, then you should either return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH (if it does not verify or is damaged) or to the editorial office at *Acorn User* (if it verifies). The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.002 from Pineapple Software.

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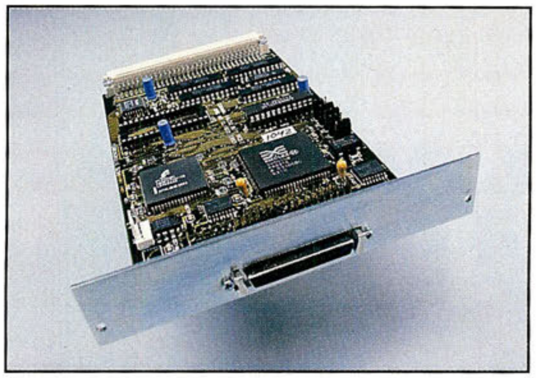
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Acorns with



'Science and technology are subjects for anoraks and brainboxes, closeted away in laboratories and out of touch with the real world. Discuss.'

If you're reading this, then the chances are you're an owner, or at least a user, of a computer. You're in touch with modern technology. You can probably work out how to program the video. But I'll bet that even so, there's a little voice, deep inside you that says either 'Technology scares me' or 'Science bores me', or both. If I'm right, then you'd better pay attention, because if you believe science is just for some cloistered elite, I have news that could change your life. As of 1 May 1995, the new building for the Techniquest science centre in Cardiff is open – and visitors are welcome to touch, fiddle and toy with every exhibit on show.

Go there. Even if you're one of the hundreds of thousands of schoolchildren in Wales and England to have experienced a school outing there already, or one of the grandmothers who reputedly said 'We must come back without the children!', go there and enjoy a satisfying day of tinkering and enlightenment. Techniquest is far too much fun to squeeze into less than a whole day's visit.

Acorn-controlled exhibits

It's not surprising, at least not to seasoned Acorn users, to learn that many of Techniquest's hands-on exhibits incorporate RISC computers and controllers. Let's face it – if enabling people is the goal, there can't be another source of computer technology to perform the task in hand quite as easily and as well as Acorns can.

This is a heritage from the BBC computer, with its versatile array of input and output facilities, and indeed Techniquest still uses Beebs and Arthur – the operating system which preceded RISC OS – for a couple of its exhibits, although the bulk of the computer-based demos use models ranging from Arcs and A3010s through to the Risc PC. There are two categories of computer exhibit: those which are about computers and what they can do, of which there are few; and those which use a computer to give the visitor an experience they could not otherwise have had, of which there are several. In the latter cases, it is the experience itself which is vital, and the presence of a computer may indeed be completely transparent to the user.



Techniquest Exhibits Director Harry White contemplates the well-known problem of the leek, the sheep and the dragon. This exhibit is run by an A3000.

Computer-based exhibits can be particularly alienating, especially for adults, who fear that this is expensive equipment they might break. So Techniquest's computer exhibits are made hardy by hiding the keyboard and replacing the mouse, where needed, with a trackerball and up to three push buttons. In some cases a concept keyboard is used instead, but always the individual exhibit is custom-designed with its own appropriate user interface.

Tree surgery

So what do these exhibits actually do? Techniquest's first ever computer exhibit in 1986 was called *Design A Tree*. This was conceived by Techniquest Exhibits Director Harry White while Techniquest was in its first phase, and was used with a lightpen on a BBC micro. The current version runs on an A5000 using a customised keypad on an IIC interface card. The visitor is able to choose six parameters which influence the growth pattern of their tree, then hit the 'Grow' button and see the result. Essentially it is an exercise in fractals. Harry is fond of this exhibit, which he says 'combines art and science in a meaningful way'.

'It's rewarding when you speak to people a while after they've used this exhibit, to find that they now look at trees and confess to analysing them in terms of "branch angle" and so on,' admits Harry.

It is also a good example of why

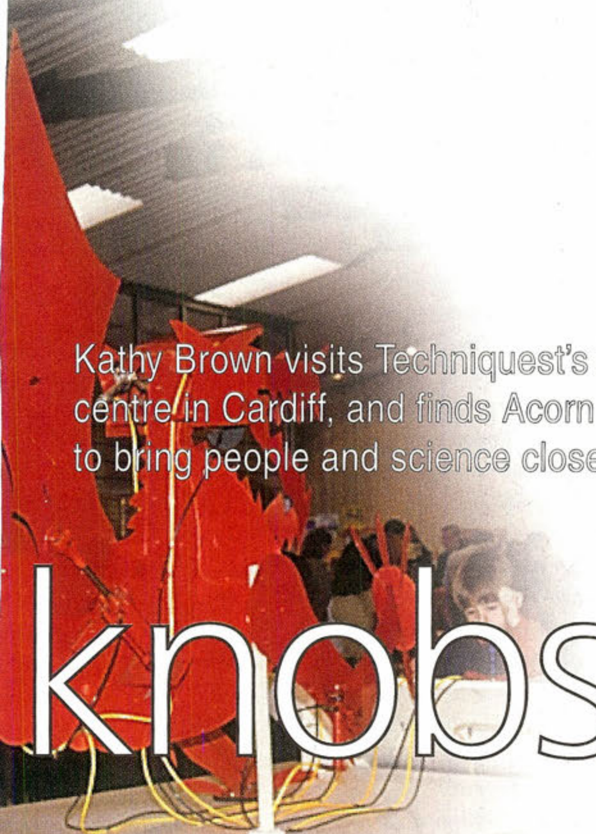
The history of Techniquest

The fun has been going on for about ten years, and was set in motion by Professor Beetlestone, now Techniquest's Director, but formerly Professor of Science Education at University College, Cardiff. Since its early days, borrowing space in former Gas Board showrooms in central Cardiff and funded by a grant from the Gatsby Charitable Foundation, to the opening in May this year of spacious, light new premises on the quayside at Pier Head, Techniquest has seen some 700,000 visitors pass through its doors – more than twice the population of Cardiff itself.

Funding for the new building came from the European Regional Development Fund and the Welsh Office. The new structure provides around 32,000 square feet of floor space, including over 160 hands-on exhibits, a science theatre, education laboratory, planetarium, discovery room and information centre, restaurant and shop.

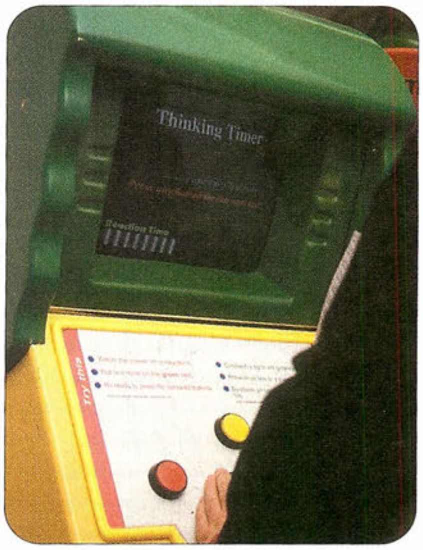
The full story of Techniquest's progress from a short-term project to a profitable educational charity describes a mission of sorts; a labour of love for all those who have been involved. The secret of Techniquest's success is that it is fuelled by a powerful philosophy: its aim is to overcome the public's sense of alienation from the cold, hard world of science; its message is educational, not in a purely didactic sense, but in a way that *enables* people in an increasingly technological society.

Take the example of Molly Parkin, the writer and broadcaster, who visited Techniquest in its early days and later reported that she felt sufficiently enabled to change the bag on her vacuum cleaner for the first time. This was not because she had seen an exhibit which instructed her how to do this, but because her visit had made her feel that such a task was within her grasp.



Kathy Brown visits Techniquest's new hands-on science centre in Cardiff, and finds Acorn machines are helping to bring people and science closer together.

knobs on



The reaction timer exhibit. The Archimedes display with its scalable anti-aliased fonts is perfect for exhibits like this.

computers are needed at all at Techniquest, which has a vast number of entertaining and informative exhibits structured from purely mechanical resources, which some might consider to be ample. But imagine trying to conduct *this* experiment using purely biological material: you'd be there forever. *Design A Tree* allows experimentation and displays results in a very short space of time, something that simply could not be achieved using the real thing.

Robust technology

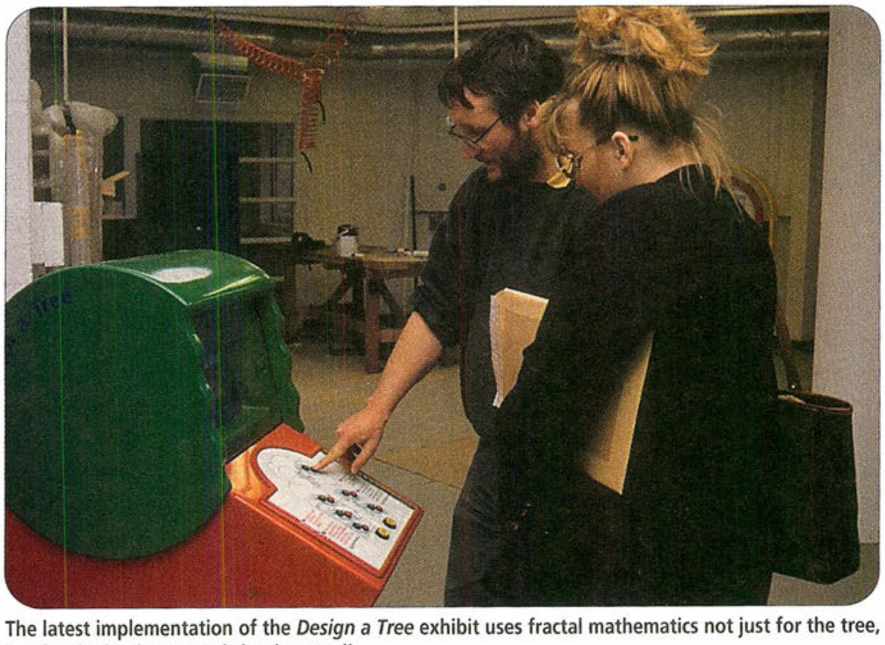
Designing and developing the exhibits to be effective and attractive can be a long, complex task. Harry White explains that getting a program to work is roughly one third of the development process, with the remaining two thirds devoted to perfecting the user interface. This can be an ongoing exercise, and it is generally said that a new exhibit is not finished until it has been up and running and working on the exhibition floor for three months. Harry quotes Sir Clive Sinclair on the Spectrum: 'Of course they're unreliable, they're subjected to the most destructive force known to man: 11 year-old boys!' But unlike Sinclair's classics, Techniquest equipment does not have a reputation for being unreliable. Everything on display must be working. If it isn't, it is removed straight away.

Harry restates the Techniquest philosophy: 'If an exhibit is broken the visitor will initially blame himself, saying "I never could get on with science, even at school." If more than one exhibit in the 160 is not working the visitor will go home saying, "Half of them were broken anyway!"' Obviously, this would negate the whole *raison d'être* of an establishment like Techniquest, striving for a rapprochement of Mr J Public with the broad spectrum of scientific disciplines.

The range of subjects embraced by Techniquest's exhibits is astounding. When you think about it, science and technology are interwoven with a whole host of other subject areas. Take Media, for instance. The *Out of the Blue* demo is an idea borrowed from the Museum of the Moving Image in London, allowing participants to see themselves on screen, superimposed onto a video image of a flight around Cardiff Bay, just like Superman, simply by standing in front of a blue background. This uses an A3010 with four IIC interfaces to control the effects and a Risc PC with Computer Concepts' *Movie Magic* card to play MPEG compressed video from a CD-ROM.

Also falling within this category is the hands-on DTP demo, which allows visitors to try their hand at desktop publishing with a Calligraph direct drive laser printer to provide a fast printout for the user to take away. Or consider statistics: *How Many Like Me?* asks the visitor eight questions about themselves and records the data, then presents the user with statistics showing how many people share their characteristics, finally calculating how many visitors with exactly the same combination of characteristics have used the exhibit.

The implementation of computer technology has led to the development of some very entertaining exhibits. Remember the old logic problem of getting the fox, the rabbit and the lettuce safely across the water in a small boat? Techniquest has brought this to life with a Welsh dragon, a sheep and a leek. As you are probably aware, dragons are predators of sheep and cannot abide eating leeks. The visitor is encouraged to attempt various permutations, placing models of dragon, sheep and leek into appropriate slots either side of a 'river', with sound



The latest implementation of the *Design a Tree* exhibit uses fractal mathematics not just for the tree, but for the landscape and clouds as well.

TECHNIQUEST

effects generated by two A3000s hidden below the platform which detect and indicate when one participant is about to have the other for supper.

One of the displays in the new building is called *Powers of Ten*. This is Harry White's latest 'baby'. 'For a long time I have admired the book and film *Powers of Ten* by the office of Ray Eames and Philip and Phyllis Morris,' he explains. 'It is a sequence of pictures starting at astronomical size with clusters of galaxies, coming down by factors of ten to an image of Earth, then a specific continent, country, region, building, person, person's hand, cells in their skin and so on, down to atomic dimensions and pictures that look surprisingly similar to the galactic ones with which we started.' Sounds a little like an advert for Irish stout. There are 42 steps from 10^{25} to 10^{-16}. Techniquest has developed this display using a Risc PC with its own sequence of pictures on CD-ROM so that the user is in control and can zoom in or out at will.

Help from the market

Harry has words of gratitude for various companies in the Acorn market: 'We've been very lucky to have Uniqueway so close. They've helped us get our CD-ROM exhibits sorted out. Barring a few hiccoughs involving white book-compatible CD-ROM drives, that's gone really smoothly. Irlam Instruments has been good, too. Its digital signal processing card has exceeded our expectations, and we've got a 24i16 card to play with.' Not forgetting Acorn itself, who got Techniquest started in 1988 with a gift of half-a-dozen ex-demo BBC Masters and a Domesday system.

'I was already pre-disposed towards Acorn because of the ease of interfacing the BBC, plus the speed of BBC BASIC. When you think back to the Commodore PET and Apple 2 and what you were having to program in those days, it's absolutely terrifying!' Harry insists that Techniquest could not have developed the number of exhibits it has in the time given without using Acorn machines. He feels that sourcing items from the PC world would be more impersonal, more expensive, and, he fears, result in equipment of lower quality. In the Acorn industry, he gets to speak to the developers themselves, and the software interfaces to the cards are generally easy to use.

This is important as it helps bring new exhibits through the painstaking process faster, which takes a demo from concept, through design and implementation to full operational status. The three influential factors remain the ease of programming, the inherent speed of the machine and the basic degree of common sense with which the Acorn is put together: 'which is not universal in the computer world,' Harry acknowledges. 'The Apple font system, for example, is a nightmare.'



Break the light beams, and the Archimedes obligingly plays the appropriate note – eat your heart out, Jean-Michel Jarre!


Harry is indebted to fellow programmers Roland Cleaver and Joshua Goodall who have worked on many exhibits.

This is a recurring sentiment on the professional scene: wherever customised practical applications are required, Acorn and the RISC processor score highly because of their versatility, speed and ease of programming. And if ever this were in doubt, a trip to Techniquest should give you the evidence you need.

It cannot be stressed strongly enough that Techniquest is a fantastic experience for *everyone*. It has been quoted as 'A marvellous place for all the family to play and learn together.' It is not a showcase for Acorn computers *per se*, but a splendid example of the practical application of Acorns – and from Techniquest's point of view the most important message that you'll take with you will be this: science *is* fun!

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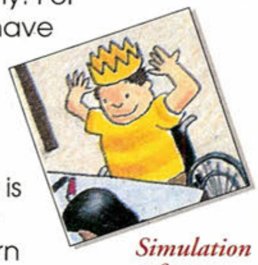




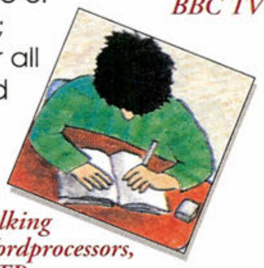












REVIEW

CARTOON

Yabba dabba doo, I'm king of the jungle too! Why, you might ask? Well, I've just spent the last couple of weeks making moving pictures on my Acorn computer.

Quite simply, animation in the traditional sense relies on an initial 'great idea' developed into a series of freehand drawings, each slightly altered, so that when they are placed sequentially (as in a flick-book) and displayed, there is an illusion of movement when viewed. Computers are the ideal medium and time-saving device for the animator because an original drawing can be copied, altered, saved onto disc and then played back on the screen.

Two software packages treating animation in completely different ways are Iota Software's *The Complete Animator* and Minerva Software's *Prime Mover*. So it's lights, action sound and here we go.

The Complete Animator

It is no boast that this is a 'complete' animation package in every sense, concealing a whole wealth of sophisticated but user-friendly features underneath its excellent user interface.

In fact what you are really getting for your money is an integrated creative suite of drawing, sound, text and animation tools. Even the excellent guidebook and video supplied with the software are designed to introduce animation as a fun activity, without being too technical. This approach will win the team at Iota many friends.



TYM LECKEY

Getting started

Once loaded onto the icon bar the software positively encourages you to experiment, and more importantly you don't need the book to begin with.

Right from the start, *The Complete Animator* can be configured to suit your own preferences using Choices which include Standard, Junior or Custom options. There is even a set-up box for a Genlock board so that your animated masterpieces can be recorded onto videotape. Create allows you to adjust the size of your film, which is set as a quarter of the screen by default. Grabbing from scanners or the screen is also available here.

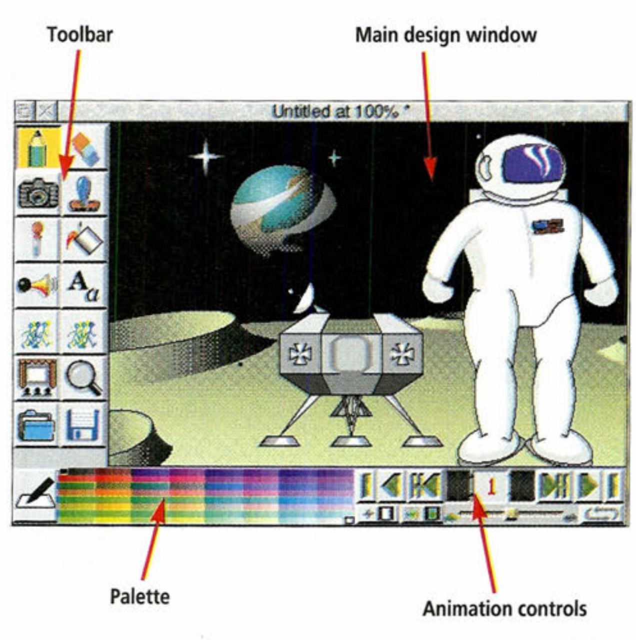
Key features

The Toolbox is the vertical column of easily recognisable icons down the left-hand side of the viewer screen. Each one has a clear specific use. For example you use the Pencil and Paintcan, with the help of the useful Eraser, to design your ideas on the viewer screen. A Snapshot (camera) is used to capture areas of the screen, or directly from other applications such as scanners or digitisers, and the Stamp Picker can be used to flip, resize and rotate your cutouts. The stamps also contains some excellent pre-loaded pictures including background scenes, astronauts, walking legs, mouths and speech bubbles. The Text tool can be used to create titles for your work.

The Play tools at the bottom of the viewer screen control the motion of the film including forward, rewind and speed (shown by a slider bar with a tortoise and hare symbol!). Frames can easily be duplicated and added, and a 'film strip' shows the frame number currently being viewed – this can be smoothly dragged backwards and forwards with the mouse.

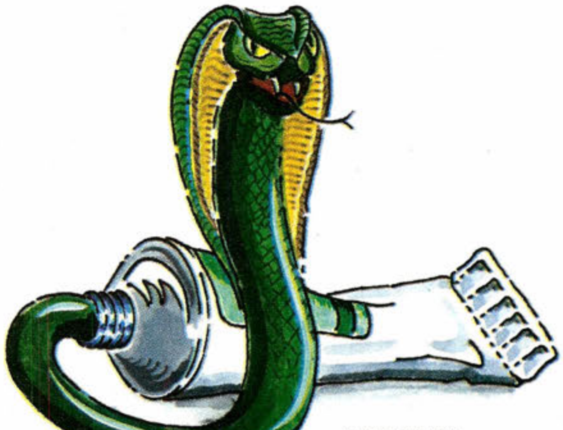
In-betweening and Ghosting buttons give you the opportunity to view three consecutive frames as if they were drawn on tracing paper, a very useful design aid. There is even a range of fade options available including slides, wipes and slats, which are excellent for those subtle changes from image to text.

Films can be created in any screen mode from two colours to 16 million, and can be saved



The Complete Animator's main window

capers



TYM LECKEY

Pete Worrall looks at two packages that'll bring out the Walt Disney in you.

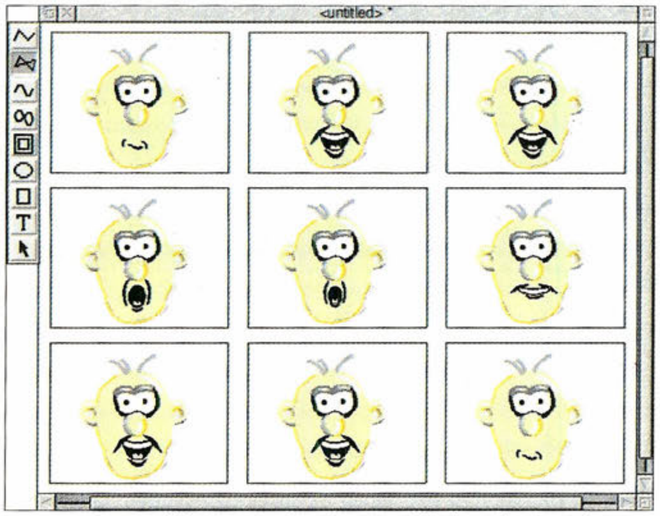
in Iota, Ace, Replay and sprite format; the soundtrack can even be saved separately if required. There is also an excellent Print option that arranges all your frames neatly on one page, which can also be saved in *Draw* file format if required. So now you can produce your own customised flick-books from your printouts.

The Sound Picker not only lets you listen to all the wonderful sampled sounds already available, but also gives you the option to drop them into the viewer screen to add that extra dimension to the animation. You can create your own sounds by either dragging in sample files or by using an Oak Recorder. Sound editing facilities are included for controlling the length, stereo position, pitch and volume of each sample. Using sounds adds that extra dimension to your films and is a brilliant introduction to multimedia.

Practical uses

The Complete Animator can be used for a wide range of different purposes, at home, work, or in the classroom, and is suitable for all ages. It is ideal as a multimedia tool and can be used to create instructional films to fit a whole range of different purposes.

It makes you think about the animation process by combining art, sound and animation together. This is an exciting learning experience. What more can I say: it is the definitive animation package for Acorns.



You can save your film out as sprites in a *Draw* file from *The Complete Animator*.

Prime Mover

Prime Mover is an interesting animation package, based on sequential sprites moving in real time along a path set against a backdrop picture. The software and rather too-technical guidebook assume that you are familiar with both the Acorn environment and more than the basics of animation, but it does support Acorn's interactive *Help* application.

Before you start, it is worth loading the demo film showing a walking man and flying butterfly. This explains the principle on which everything moves.

Getting started

To begin with your ideas must be worked out in a paint package. Firstly, consider a starting

Comparison table

The Complete Animator

1. Flick-book animator with a comprehensive set of art and sound tools.
2. Includes a colourful, clear, descriptive guidebook and instructional video full of ideas.
3. Animation is frame based with a range of special effects such as fades and wipes.
4. Films can be saved in Replay, Iota, Ace and sprite formats and all the frames in the film can be saved and printed as a set of *Draw* files. The sound samples can even be saved.
5. Clear toolbox interface with large self-explanatory icons.
6. Plenty of scenes, faces, walking figures and films included with the software for you to play with.
7. Film speed is controlled simply by slider bars or, more accurately, through the menu.
8. Intuitive animation software for all seasons and age groups.

Prime Mover

1. Sprite animator, but you must design your sequence in a paint package beforehand.
2. Guidebook is comprehensive, but rather too technical and fails to describe the animation process clearly.
3. Animation is very smooth, defined in terms of time rather than frames, and is played back in real time lasting from five seconds to many hours.
4. Films can be saved as a *Prime Mover* file, Ace and sprite format.
5. Rather complicated interface with too many small unclear buttons.
6. One demo film is included with the software with a limited amount of data.
7. Extremely accurate timing and movement facilities.
8. Rather inflexible animation software, but works well with digitised images.

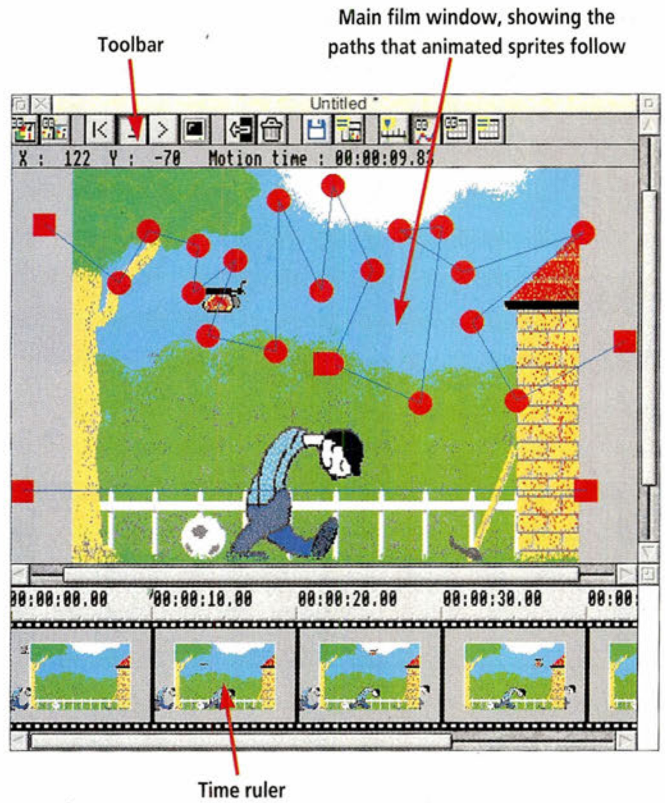
point: perhaps a drawing of a butterfly with the wing in different positions, or a figure walking.

This requires practice, and perhaps a few preparatory real drawings in a sketchbook is a good idea. As long as you end up with three movement sprites plus that all-important backdrop all saved onto disc, you are ready to begin using *Prime Mover*.

Key features

The Main Film window (for animation playback) and Time Ruler window appear when *Prime Mover* is selected on the icon bar. Sprites can be dragged into the Main Film window, but make sure they are clearly numbered: backdrop, fly1, fly2 and fly3 for example. They are stored in the Film Sprite window in preparation for your animation. Here you can edit the sprites in different ways including creating transparent masks (useful for moving objects), rotating and trimming. It also allows sprites to be exported back into an art package if required.

Sprites can then be dragged from the Film Sprite window into the Main Film window. Now comes the clever bit: another window called the Film Animate window turns your series of butterfly sprites into a moving animation. To do this you select the sprites required using the Adjust mouse button and drag them into the Film Animate window. After typing in a filename, your butterfly or fish starts to move in a small window. These moving pictures are referred to as 'animates', and can be saved separately and used in different films. Drag your clever moving image onto your backdrop in the main window and you can now set a path for it to move along.



Prime Mover **allows you to design a path for animated sprites to move along.**

The button bar controls are visible above the main film window. Red square markers in the display show the positions of each of the objects at different times in the film. Blue lines can easily be created in between the red markers to denote the 'paths' the objects will follow (called motions).

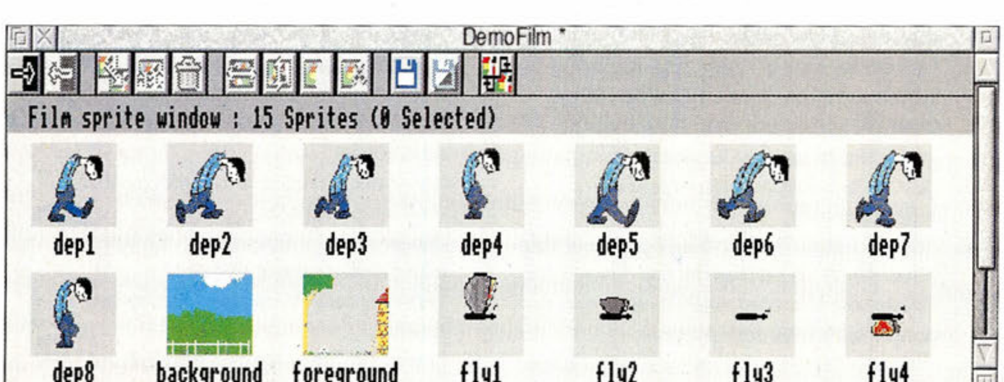
Circular red markers can be created for changes in direction, called a 'step' in the manual. So basically, the square markers finish the motion and the round markers are the intermediate ones that can be edited. Once your path has been designed, press play and hey presto! Your animated sprite will glide across the screen. This is the exciting bit, but it does take a little while to get there.

The Film Ruler window is always visible at the bottom of the Main Film window and contains small green time markers and red markers indicating when a selected motion begins, ends or changes direction. These can be adjusted to suit your time or movement requirements. The animation playback is incredibly smooth and realistic so that in the demo film the man walks across the screen pursued by a butterfly. The final film can be saved as a *Prime Mover* film, or as an Ace film for anything up to five seconds long; after that it consumes a fair bit of memory.

Practical uses

Prime Mover requires a certain amount of forward planning before it's up and running, and it is a pity the guidebook does not explain this more fully. There are certain assumptions made regarding the skill level of the user, and I certainly would not describe it as 'an animator for all ages and abilities'.

Films created basically contain moving objects following a path within a backdrop. While I did not find cartoon animation particularly exciting using *Prime Mover*, it is good fun floating digitised images on top of one another at different speeds. These results were both arty and experimental and could be downloaded onto video tape through a genlock board. If you have patience you will find that *Prime Mover* is a unique package and I am sure it will win friends in some quarters. AU



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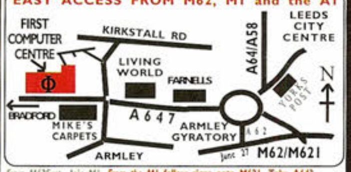
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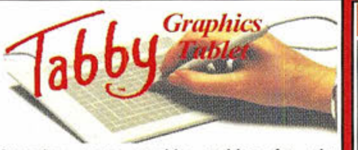
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Applause

The only two contenders in the top-end desktop publishing market are *Ovation* and *Impression*, and for most people *Impression* has had the edge ever since it was re-released as *Impression II* some years ago. *Ovation* has always had a sound following, but since the release of *Impression Style* and *Publisher* it has been, effectively, behind.

You will be glad to know, then, that *Ovation Pro* is a completely re-written version of *Ovation*, and when it is released it will offer a significant number of advantages over *Impression Publisher*, though some important features are being saved for a second release. Beebug is aiming *Ovation Pro* at *Publisher* users, and is even planning a similar price tag, around £165, but a final comparison will, obviously, have to wait until *Ovation Pro* is released. What can be said, even at this early stage, is that *Ovation Pro* will give Computer Concepts something to think about if it is to remain the market leader in Acorn desktop publishing.

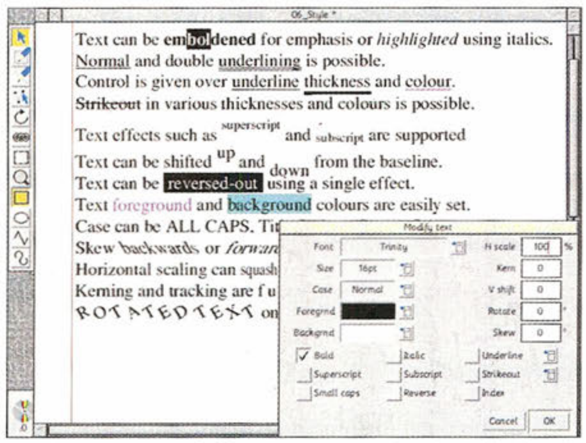
The user interface

The first thing that strikes you about *Ovation Pro* is that the user interface has been thought out from scratch. Along with your standard document window are three attached windows: the toolbox, which at first glance looks a bit like the one in *Draw*; the info palette, which is initially attached to the bottom of the main window and contains familiar items such as alignment buttons, local effects and font names, though the information shown changes depending on what tool is selected in the toolbox; and the button bar, which is positioned inside the top of the window, like *Impression*'s tool bar, and has various buttons for save, cut, paste, undo and so on.

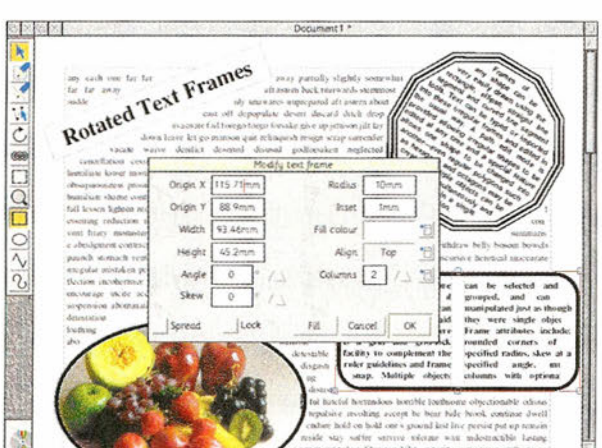
The toolbox and info palette can be moved around, a bit like the toolbox in *ArtWorks*, and can even be made to stay fixed. The button bar is always present at the top of the main window (assuming you want it to be shown), and you can customise exactly what appears on it. The most obvious application of this is to tailor the package for use with children or classes, but the way this customisation works is quite amazing, and shows just how well thought-out the design of *Ovation Pro* really is.

Each button is given a name, a function and, optionally, a sprite. The function can be anything from a whole language which is built into *Ovation*: it's a bit like C, and is very easy to use.

You can do exactly the same with any keypress – so you could define Ctrl-Shift-A to insert your address, if you wanted – and you can define any keypress to 'perform' another keypress. The upshot of this is that if, for example, you don't like that fact that F3 brings up a save box, you could define Ctrl-S to do this instead. Interestingly, this enables you to produce a keymap file that will make *Ovation*'s keys the same as *Impression*'s – or, indeed, any other package's – so reducing the already shallow learning curve considerably.



Ovation Pro's **range of effects is very comprehensive indeed, and all effects can be used in styles.**



Frame creation is very flexible, and you can have rotated text, multiple columns in frames, and irregular frames.

Creating pages in Ovation Pro

Ovation Pro is a frame-based desktop publisher, which means you have to create frames into which pictures and text can be placed. Frame creation in *Ovation* is more flexible and powerful than any desktop publisher I have ever seen.

Both text and picture frames – no distinction is made when creating frames – can be rectangular, elliptical or polygonal, and the shapes remain fully editable throughout, even when text or pictures are placed inside. The nearest parallel in the Acorn world is drawing objects in *Draw*: frames act just like closed paths in *Draw*, so points can be moved, added and deleted; bezier curves can be created and edited; and line segments can be converted between curved and straight. There are almost no limitations to the shape of frame created.

As if the frame editing features weren't flexible enough, there are two more 'frames' associated with each frame, namely the inset and the stand-off frames. These define how text is repelled on the inside and outside of the frame respectively, and most of the time you can leave these frames alone, instead setting inset and stand-off to be a uniform distance inside or outside the frame. However, these frames can be edited, so you can repel text in exactly the way you want on both sides of frames.

You can also rotate, re-size and move frames easily, but the advantage over *Impression* is that you can rotate text frames as well as picture frames: the text rotates with it and remains totally editable. In fact, *Impression* can only create rectangular text frames, whereas *Ovation* can create any shape of text frame you want, so this is one area where *Ovation* has a definite edge. Another useful advantage of *Ovation* is that you can select more than one frame – by dragging a box over a range of frames, if you wish – but you can still change attributes such as the border and background colour, which is impossible in *Impression*.

Text frames can also be defined to contain more than one text column, with variable guttering between columns. This speeds up the automatic creation of newspaper-type layouts considerably. Another useful drawing feature is the creation of

for thought

Beebug is nearing completion of its latest desktop publisher, Ovation Pro. Mark Moxon took a look at a late alpha version, and liked what he saw.

lines, something *Impression* still doesn't do. These can be created in exactly the same way as frames, but don't have to be closed, and are most useful for creating arrows and gutter lines.

Text, styles and effects

Ovation Pro implements style attributes – bold, italic, alignment, font and so on – by using local effects, and by using named styles. For those who aren't familiar with this system, a style is simply a collection of effects – bold, Trinity text at 12pt, for example – that is given a name and is applied anywhere within the document. If the definition of that style is changed, then all the occurrences are updated to reflect the style's new definition.

Ovation scores over *Impression* in a couple of aspects. In both packages a style can be applied to selected text, or it can be defined to apply itself to entire paragraphs. However, in *Ovation* you can also define styles to apply to words, with obvious advantages. Another good point for *Ovation* is that anything you can define in a style – rule offs, reverse text and so on – can also be used as a local effect, which is not always the case with *Impression*, notably in paragraph spacing.

The info palette is the easiest place from which to apply effects, but it does a lot more than show what effects are in place, like *Impression*'s. The palette is context-sensitive, so it changes depending on what is being edited.

There isn't much to say about styles and effects: both *Ovation* and *Impression* have a similar range of effects and a similar style system, though *Ovation* includes text skewing and rotation, plus more control over underlining. *Ovation* also has the advantage that all the effects can be accessed from one dialogue box.

Multiple undo

Ovation has one huge advantage over *Impression* – it has an undo facility. It is a multiple-level undo, the depth of which depends on a user-defined memory setting for the buffer, and it works well. Anyone who has used *Impression* much will appreciate how useful undo and redo are.

There's also a complete colour system, with named colours, tints and so on. There is even a Pantone-like system that is user-definable.

Ovation also has a pasteboard at each side of a page so you can move objects off and onto the page at will, like in *ArtWorks*. Its size is definable and, of course, it doesn't affect the printout.

Word spacing can be controlled more effectively than in *Impression*, and its use is like in *Quark*. You can tell *Ovation* how small it can make spaces between words, and how to spread out words and spaces to fill justified columns, even to the point of spacing entire words across columns.

There is a sophisticated bulleting system, too, which enables paragraphs to be numbered automatically as part of a style. It's more flexible than *Impression*'s 'initial and subsequent' numbering system.

Conclusion

I could go on all day about the features *Ovation* has which no other package can provide, but the box opposite sums up the most interesting and useful features. Its specification is certainly impressive.

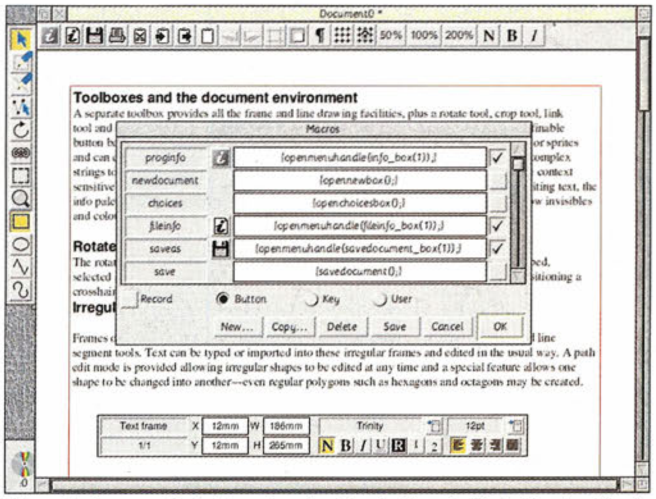
One feature which might not make it into the first release is colour separation, which would rule *Ovation* out for anyone working with CMYK or spot colours. However, Beebug fully intends to add separation, though whether this will be as part of a more expensive top-end product is undecided.

Whatever your DTP needs, consider *Ovation Pro*. Judgement must be reserved for a full review of a finished product, but at this initial viewing, it looks very promising.

Beebug
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The main document window, showing the toolbox (left), button bar (top) and info palette (bottom), plus the macro dialogue box for defining icons in the button bar.

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E.&O.E.

Acorn



Steve Mumford reviews Acorn's latest Desktop development package.

After a fair amount of hype and a great deal more rumour, Acorn has finally released an interpretation of the C++ language. It comes together in a package that contains a new version of its previous C compiler and Desktop assembler, as well as the brand new *Toolbox* and a whole batch of Desktop development utilities.

The package is supplied on six discs and comes complete with four manuals covering C and C++, the assembler, the supplied Desktop tools and finally, the technical details of Acorn's *Toolbox*. They're not ring-bound, but this came as somewhat of a relief to me since my reference manual for *Desktop C* fell apart on a regular basis. The system requirements of the package are four megabytes of RAM, a hard disc and RISC OS 3.10, so they're slightly more demanding than those needed for *Desktop C*.

By the CFront

I'll start with a look at the C++ compiler – perhaps the most obvious addition to the development package. Acorn's compiler is a port of version 3.0 of AT&T's *CFront* product; what this means in practice is that you're getting a translator which converts your C++ code into the C equivalent. A few features aren't yet implemented, including exception handling, but *CFront* has a good history on other platforms – it was written by the original creator of C++, Bjarne Stroustrup. There are few differences in operation between the C compilers – you'll notice that C++ takes longer to compile since it's pre-processed and translated into C before being treated in the normal way.

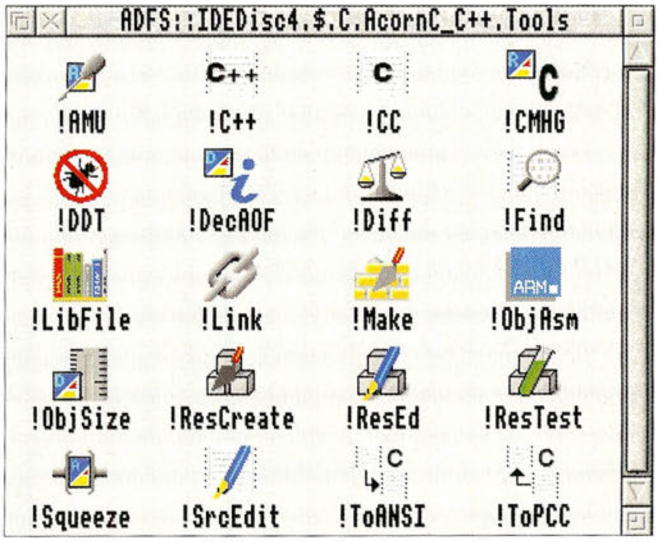
Looking at the title of Acorn's product, it seems likely that C++ is one of its major features – however, all you get in the way of examples are two *Hello World* programs, one of which has an intentional bug in it. All the major examples are written in C, so you're pretty much on your own. I can understand why the manuals don't contain tutorial sections – a good tutorial would be another manual in itself – but I would have liked to see several more C++ examples included on the discs.

Searching through the Toolbox

The most exciting feature of Acorn's development environment is a set of resources referred to as the *Toolbox*; it replaces the *RiscOSLib* library supplied with *Desktop C* and is supported by two new resource editors. The *Toolbox* is implemented as a series of modules which act as an interface between the WIMP and your own sourcecode. Because it consists of a whole host of SWI calls, you're not limited to writing your programs in C; it's equally possible to write them in C++ or BASIC.

Once it's been set up, the *Toolbox* is capable of automating many of the procedures that proved time-consuming in the past, such as menu handling and window generation. It communicates with your code by way of events, so after a handler has been written for a particular circumstance, you can leave the *Toolbox* to listen out for the appropriate message – when the event occurs, it will automatically call the function you've assigned.

In the same way that the *FormEd* utility allowed you to design window template files for inclusion within applications, the resource editor gives you the power to create most of the features needed in your programs. A set of prototypes are available which cover the



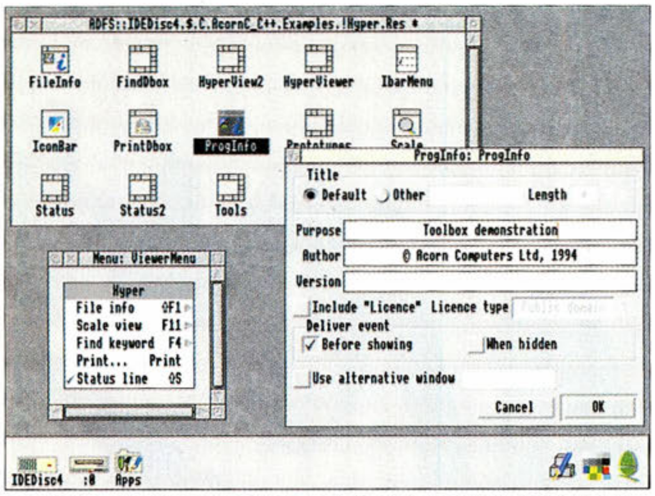
C/C++ includes a remarkable number of tools – some old, some new.

C++ update

Since C/C++ has been released, Acorn has produced an upgrade to correct a few faults in the package, as well as providing an extra utility named *ResCreate* to augment the resource editor.

If you'd like to get hold of this upgrade and you're able to access the Internet, you can download it free of charge from Acorn's ftp server, *ftp.acorn.co.uk*, using anonymous log-in. Acorn Direct is also able to provide the disc if you request the update to C/C++, but there's a nominal handling charge of £5, with cheques made payable to Acorn Direct – you can write to them at 13 Dennington Road, Wellingborough, Northants NN8 2RL.

REVIEW



ResEd allows you to design all manner of windows and menus, and control their behaviour.

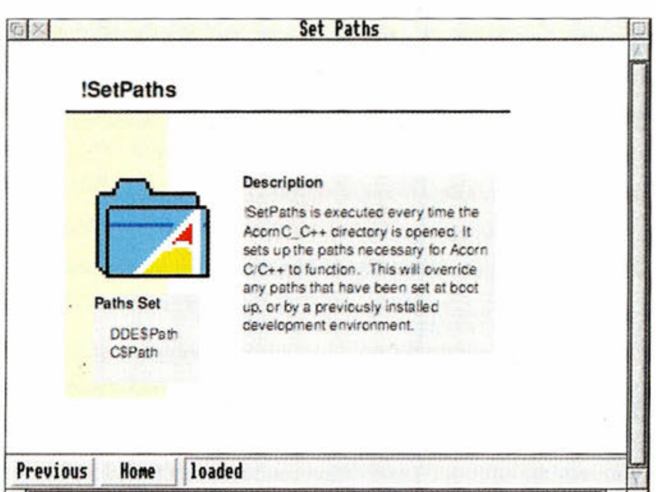
major features available in the WIMP system such as windows, quit boxes, slider bars and font selectors. After you've picked the ones suitable for your application, they can be customised and linked to form the bulk of your window-driven software. For instance, it's particularly easy to create multi-level menus with *ResEd*, and linking them together is just a matter of dragging one menu to a dialogue box of the other.

The *Toolbox* is undoubtedly an extremely powerful resource, and with practice it can simplify the routine procedures of creating the windows interface for your software, leaving you more time to spend on the important parts of the code. However, I would have liked to have seen a better introduction to its use in the manuals – although a significant amount of space is devoted to the example *Hyper* application, this program consists of no less than 11 source files and 13 header files. When you're faced with that amount of information, it doesn't make it particularly easy to learn from. Another application has been included, and it's a little less daunting – an implementation of the Acorn calculator using the *Toolbox*. Although it's not without its bugs, it shows the latent power of the system, since it's possible to completely alter the layout of the calculator using *ResEd* without changing a line of code.

Conclusions

I must say I'm surprised that Acorn chose to release the package under the banner of a C++ compiler when it has so much more to offer. For instance, I've not had space to discuss the new versions of the C compiler or the assembler, but they've both been updated to cater for the full range of ARM chips – particularly important when you consider where the market's heading. The combination of languages supported allows you to pick the best features from each, so you can utilise the speed of assembler with the flexibility of C and C++.

If you're specifically looking for a C++ compiler, then I'd suggest you think seriously before buying Acorn's version. It's expensive, and to be honest it's not worth it for that alone. However, if you've been using previous incarnations of C and you intend to write complex Desktop applications, the *Toolbox* is a huge step forward when it comes to program design. If you're prepared to spend some time absorbing the information in the manuals and carefully studying the examples provided, you should be able to produce some impressive applications and slice your development times in the process. Taken as a whole, Acorn's C/C++ is a package of considerable power, and it's definitely worth the outlay if you intend to use it seriously. AU



A page from *Hyper*, an example application written using Acorn's *Toolbox*.

Other C++ compilers

Acorn isn't the only company to have produced a C++ compiler, and if you just want to dabble in the language without paying for all the extras, you might want to consider the other products available. Firstly, there's GNU C++, available from a number of sources including the recent *Acorn User* CD-ROM. It's free of charge, but you'll need a hard disc, 4Mb of memory and a lot of patience to put it together – it's not for the faint hearted. Neither is it suited to writing large WIMP applications, and once you'd got to grips with the language you'd probably want to move on to a compiler which gave you a helping hand in the creation of Desktop programs.

If your machine isn't endowed with stacks of memory or a hard disc, you haven't been forgotten. Beebug's *Easy C++* will run on a 2Mb machine from floppy disc. It's simple to use, and although it doesn't contain the likes of Acorn's Toolbox, two WIMP libraries have been provided. Perhaps more importantly, Beebug's product compiles C++ directly without translating into C first, and more of the language has been implemented. Although it's not as suitable for the creation of Desktop applications, it's a good choice if you're interested in learning about C++. Beebug can be contacted on (01727) 840303.

Product details

Product: Acorn C/C++
(Non-Clan members)
Supplier: Acorn dealers
Tel: (Acorn Customer Services) (01223) 254254 to find your nearest dealer
Price: £249.99 inc VAT.
(£50 discount for owners of *Desktop C* or *Desktop Assembler*)

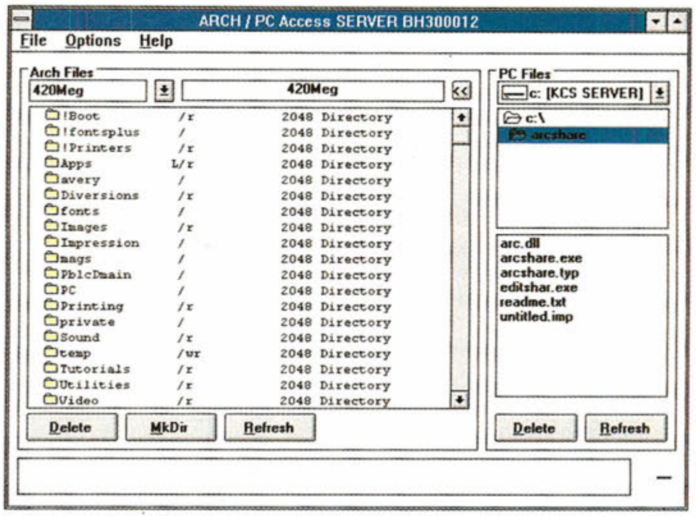
(Clan members)
Supplier: Acorn Direct
Tel: (01933) 279300
Price: £149 + VAT
(£99 + VAT for members owning *Desktop C* or *Desktop Assembler*)

Pros: Contains powerful application design tools • Includes improved versions of Acorn's C compiler and Desktop assembler • Discounts for past users and Clan members

Cons: Few examples of C++ included in package • Not for the inexperienced • C++ language not implemented fully

Arcshare™

Acorn to PC Networking Software



Its finally happened. A company has come up with a simple and inexpensive solution to an age old problem.

Getting access to files stored on a PC has always been a problem for Acorn computer owners. There has always been Floppy Disk transfers, but these are slow and limited to 1.44Mb. There has been several attempts to "Network" the two computers together but most attempts have been problematic and needed a great deal of extra hardware.

Arcshare is the latest program from KCS which allows any Acorn computer with an Access network card to talk to any PC with a network card & Windows.

Arcshare needs no extra hardware other than cheap network cards. Arcshare is very easy to use through its graphical interface and is, on average 40 times quicker than using a floppy disk, but with no file size limitation. Arcshare can even use CD Rom drives from a different machine.

Available Now.



In the Main screen on Arcshare Client, both the Acorn and the PC directories are visible. Files can either be copied, or deleted, even new directories can be created on the Acorn from the PC. Arcshare has the advantage, that it can be run directly from the Windows Filemanager so that file manipulation is simple. Arcshare can run under a Windows for Workgroups network in conjunction with other PC's on the same network. There is no limit as to the amount of Acorns that can be seen from the PC on the Access network.

On the Acorn, the PC directories are designed to look just like any other Acorn directory. In fact, Arcshare makes the PC behave as if it were part of an Access network. Files can be copied from the PC directories to acorn directories in the normal manner. Files can even be copied from one PC to another PC via the Acorn.

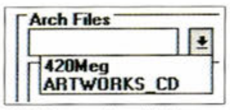
It's time to join the PC and the Acorn on the same network. Call KCS now to find out more about Arcshare and networking Acorns to PC's.

Arcshare Client v1.4

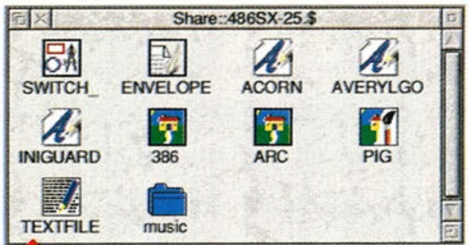
* Allows file transfers between Acorn and PC Computers.
* No Filesize Limitation.
* Automatic Filetyping when the Acorn receives a file so that the file is ready to be loaded into an application straight away.
* Automatic File Extensions added when a file is transferred from the Acorn to the PC so that the file can be loaded into a program straight away.
* Easy to Use Graphic Interface.
* No "Dedicated Server" Computer required.
* Connects directly to Acorn Access Network. Very easy to setup and install.
* Works with Windows 3.1, 3.11, Windows 95 & Windows NT

Arcshare Server v1.4

* Has ALL the Functions of Arcshare Client v1.4 but with the following additional extras.
* Allows transfers of files from the Acorn.
* When a Window is open displaying a PC directory, all the files are filetyped even though they are stored on the PC!
* Files can even be copied from PC to PC from the Acorn.
* Any Acorn on the Network can access the PC.
* Makes the PC system look like another Acorn Access system.
* Files can be loaded into applications directly from the PC.



CD Roms, Hard Drives & other Acorn Computers can be seen & used by the PC.



The PC Directory looks just like another Acorn Directory, thanks to Automatic, remote Filetyping.

Ideal for School Networks!



Prices

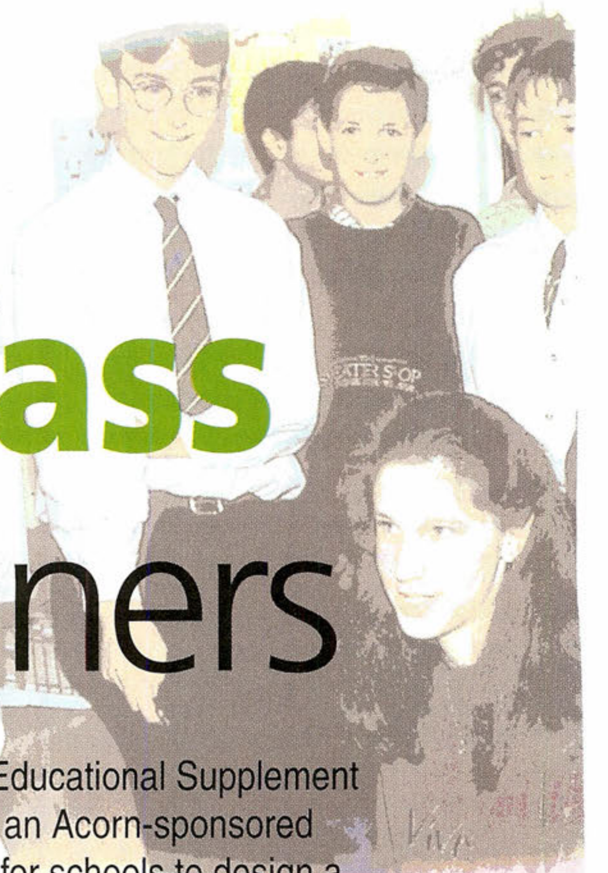
Arcshare Client v1.4
£79.00 & Vat

Arcshare Server v1.4
£99.00 & Vat

Available from:

Kimberley Computer Services. 73 Chapel Street, Leigh, Lancashire, WN7 2DA. Tel - 01942 677777. Fax 01942 672300. email - Info@kcsprem.demon.co.uk

& other reputable Acorn Dealers



Top class designers

The Times Educational Supplement recently ran an Acorn-sponsored competition for schools to design a newspaper in a day. David Matthewman travelled to Whitby and met the winners.

It must be something in the river Esk. Maybe some strange combination of minerals from the water that cascades from the North York Moors down through Eskdale to Whitby has a dramatic effect upon the ability of the local schools to do good DTP. The winner in the Key Stage 3 category of our school competition to design a page in *Acorn User* came from here – Mark Landers of Eskdale School. So did the winners of the *Times Educational Supplement's* competition to design a newspaper in a day – a team of over 80 students at Whitby Community College.

The challenge posed by the *TES* in the Acorn-sponsored competition was to design and produce a national newspaper in a single day: news, features, sport, TV listings, adverts, lost puppy story, the lot. The students at Whitby are no strangers to the competition, having come second last year. So determined were they to achieve that prestigious extra place that they actually produced two magazines: *The Apollo* printed on the day (15 March) and *The Apollo Arts*, a 16-page supplement which (in best *Blue Peter* fashion) they prepared earlier.

Assembling the team

Right from the start *The Apollo* was run on very professional lines. The staff for the magazine wasn't picked in the usual 'whoever was in the library at the time plus my mate Chris 'cos he's got a cool camera' basis. Prospective journalists, ad managers, editors and so on all had to submit applications, including past experience and ideas, and it was using these that the team was chosen. It is hardly surprising therefore that most of the top jobs were filled by people who had worked on the magazine last year in more humble positions.

In selecting the team, the College staff were careful to draw from all sections of the College community. 'We had students from all years and abilities working on the magazine,' says Stuart Green, one of the teachers who oversaw the project. 'They all played a part, and the whole team worked together very well.'

The editor of *The Apollo* was Charlotte Dominiak. Nicknamed 'the tyrant' (but not within her earshot), she had the final responsibility for seeing that everything ran as smoothly as possible. In this she was greatly assisted by her deputies, Tom Weatherill and Rebecca Cohen, and by Anna Kirby, the sub-editor of *The Apollo Arts*, who also had a great influence on the design of *The Apollo*.

Advertising

One notable feature of *The Apollo* is the amount of advertising it generated. A full 20 per cent of the paper was adverts – a small proportion by *Acorn User* standards but enough for *The Apollo* to cover its printing costs. This remarkable achievement was a result of the hard work of the advertising team headed by Peter McCleave, who admits: 'We opened the yellow pages and went through them with a pin. I needed to learn quickly how to deal with companies. In the beginning, the excuse I'd get was "We'll phone you back." They never did though; I'd have to phone them back and be diplomatic. I didn't want to sound pushy but I did want to get the advert.'

'Many of the adverts in the other entries were made up by the teams involved,' says Charlotte. 'They couldn't believe we'd got all these genuine adverts.'

While most of Peter's advertising was local to Whitby, there were a couple of exceptions, including an eye-catching Rank Xerox ad on the back page of *The Apollo Arts*. Placing ads in the appropriate place in the magazine is all-important, and Peter did a splendid job of arranging his adverts in the right sections.



REGAN

Stuart Green, deputy head of Mathematics and one of the teachers who oversaw the project.



Some of *The Apollo* team, proudly displaying the plaque they were awarded by the *TES*.





Diana Yeadon, fashion editor on *The Apollo.* The judges singled out her page for praise; it featured four fashion 'makeovers' on members of the College's staff and was both amusing and eye-catching.



Left to right: Tom Weatherill (deputy editor), Charlotte Dominiak (editor) and Beka Cohen (deputy editor), the editorial staff on *The Apollo* cut the cake which the College had made specially for them, and try not to look too embarrassed.

He even managed to squeeze a couple onto the front page, something we at *Acorn User* have yet to do. I hope that Beacon Farm and Holman's Bookshop paid Peter well for the privilege.

Good design

It is one of the signs of a well-designed magazine that you don't stop to notice how well-designed it is – you are too busy reading it. This is certainly true of both *The Apollo* and *The Apollo Arts*, helped no end by the mature and lucid writing style. From the lead story about the tensions between John Major and Bill Clinton (headline 'It's good to talk, John') through to stories about Turkish Moslems, the dubious morality of cheque-book journalism and a recipe for spinach and cheddar soufflé, the writing never falters, and the straightforward and consistent layout would put many 'trendy' newsstand magazines to shame.

The Apollo Arts shows some especially deft touches, as befits an arts supplement. Much consideration went into the cover, but eventually a photo of artist William Tillyer's studio ousted a photo of an actor from *Heartbeat.* 'It was a close thing,' explains Anna Kirby, 'but the studio picture won in the end because of the feeling that the picture was a doorway drawing you into the studio just as the cover draws you into the supplement.' Matt Young's photography was certainly of a very high standard, as were all the supplement graphics.

Printing the supplement out was achieved by the heroic efforts of Stuart Green and staff editor Rob Myers taking hourly shifts through two complete nights, changing the paper in the printer every two minutes. The master pages were produced on a PostScript HP LaserJet 4P which took up to 40 minutes to produce some of the more complicated pages, then printed out in bulk on an A2 photocopier loaned by Rank Xerox. The copier allowed the supplement to contain a limited use of spot colour, which was used most effectively (read sparingly).

Selling out

The Apollo's initial print run of 500 copies was doubled when the first batch sold out to the eager citizens of Whitby, and the (modest) profits will be ploughed back into next year's competition. The Risc PC with an Epson GT-8000 scanner from Irlam and *Publisher Plus*, which produced *The Apollo*, has now been joined by a second Risc PC – the College's prize for winning the competition – which will doubtless help greatly next year.

Stories for the magazine were typed up using *Edit* and *Style* on the College's network of A3020s and A3000s. On 15 March itself there was a constant flow of data round the school, from the 'news gathering room' with TV, Ceefax, radio and telephones, to the various computer rooms, to the Risc PC on which the paper was designed, onto the HP Laserjet for a hard copy and then either off to the photocopier or (more often) back into some stage of the cycle for re-writing.

Whether it is something in the water, or just the simple fact that rigorous selection procedures produced a team of the right people in the right jobs, the students who worked on *The Apollo* should be proud of their efforts. They claim that the experience has put them off journalism for life, but this journalist has got a shrewd suspicion that he's not heard the last from the staff of *The Apollo.* AU



Rowan Griffin, who did much of the computer work on *The Apollo* (and wrote the lead story) tries out the Risc PC that was the College's prize. In the background is the machine on which *The Apollo* was designed.



Knowing me, David Matthewman, knowing you, James Webster (aha!). In an unexpected turning of the tables, the editor of the College newspaper (left) interviews the deputy editor of *Acorn User*.

Club Corner

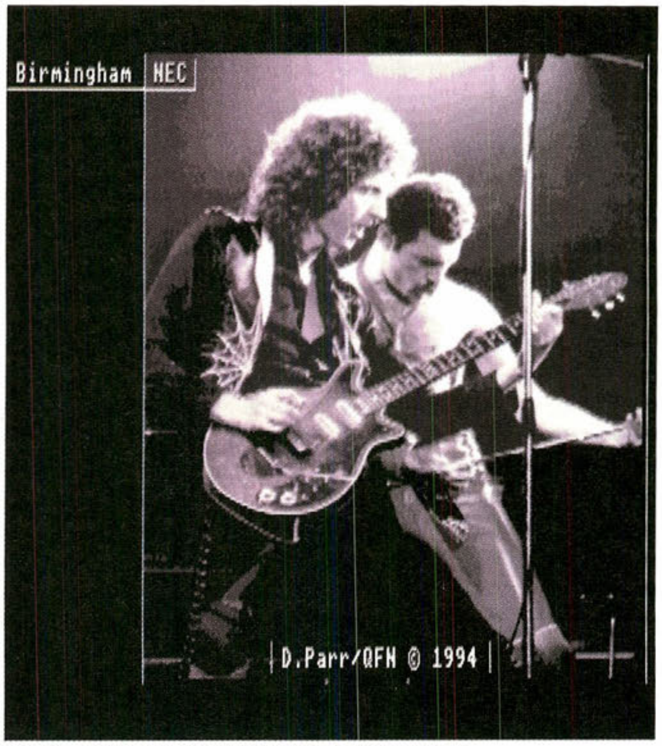
Chris Jackson talks to the author of a disc magazine dedicated to that most famous of rock bands, Queen

A year or two back, disc magazines were popping up all over the place and it seemed every other week you would hear of a new one. Recently, however, the trend has seemed to die out and disc magazines are now few and far between. Of all the disc magazines remaining, there's only one I know of which is based on a non-computer subject that has been computerised: the *Queen Fan Newsletter*.

I won't talk much about the *QFN*, as it hasn't got much to do with computers, but basically it's the newsletter of a club for fans of the Queen rock group, and has around 500 members. As it is one of the larger fan clubs in the country, it has close links with the remaining members of Queen.

David Parr, the founder and editor of the *QFN*, decided he would like to bring the printed newsletters to our computer screens, and being a fan of Acorn computers, he decided to get to work on some code for the front-end of the magazine to work in the Archimedes Desktop.

Some months on, with the help of Ian Scott, David Parr has produced a colourful yet easy-to-use multimedia-style front-end which works in the RISC OS Desktop. The text from the newsletter appears in scrollable windows which can be brought up by clicking on icons on a contents page. One good thing about bringing something such as this to the computer is that colour pictures can be used throughout, without putting the printing budget of the magazine up, and I was glad to see plenty of video digitised screen shots from photographs of Queen while in action.



Queen – rocking the Archimedes thanks to David Parr.

David assured me that although they were very high quality, he hadn't risked infringing copyright laws by taking them off videos. I expected to see a front-end which had been knocked together in a couple of hours, but it is quite the contrary; it is both professional and easy to use, and doesn't suffer from the problems other Acorn multimedia applications do.

The magazine consists of various sections, news, quizzes, classifieds, letters and other items, which make for a very interesting read. Something that would make the magazine better is support for Acorn's interactive help, so new users can navigate through the information as easily as experienced Acorn users. However, there is built-in graphical help, and it seems to be quite intuitive. The loading screen mentions the possibility of animation, which David tells me he is still working on, so watch out for that in a future issue.

The classified section of the magazine I found particularly interesting as it makes buying and selling Queen memorabilia an enjoyable experience. Items such as CDs, posters and records are all available through the advertisements which are free.

One very good idea of David's is that issues of the disc magazine that are three months old are sent to public domain libraries. This will allow vaguely up-to-date copies of the magazine to be distributed as demo copies, and it will probably entice a lot of people who, wouldn't have heard of it otherwise, to take a look at the magazine. In conclusion, I think that if you are a fan of Queen you should definitely take a look at this production. It's a perfect demonstration of how paper magazines can be brought into the technological age. The graphics are superb; most of the digitised video is high-resolution and taken from good quality photographs rather than home-made low-quality videos.

David Parr, the person responsible for bringing the Acorn version of *QFN* to us, can be contacted by phone on (01772) 556117 or by writing to *QFN* Software, 128 St. Thomas' Rd, Preston, Lancashire PR1 6AY. If you send an SAE and disc he will be able to send you a back issue of the magazine for you to sample. Alternatively, you can download a copy of QFN from my BBS (see my details in the box). Non-UK enquiries should include an IRC (International Reply Coupon) available from Post Offices, as well as a blank floppy. Subscription costs £5 for four issues, which will last a year. AU

Contacting me

I would be interested to hear from any Acorn-oriented clubs throughout the world (especially Scotland) to cover in this article. You can get in contact with me by e-mail at cjackson@digibank.demon.co.uk, via my own BBS 'The Northern Arm BBS' on (01274) 530831 (at up to 14k4) or by post at The Club Page, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP.

Join the Clan and go to the show all for just £15

Are you enthusiastic about Acorn equipment? Do you want to influence what Acorn is doing? Do you want to keep up with the latest developments? Then this offer is for you!

Clan Acorn gives you the opportunity to be involved in shaping the future direction of Acorn technology. You will receive privileged information about some of the technology the company is considering, and have the chance to feed back your ideas and suggestions directly to Acorn. You will also have an opportunity to evaluate early and beta releases of products.

Acorn World '95 is the annual event that's a must for all Acorn users. Held at Wembley from 27 to 29 October, it's where you can see the latest developments for the Acorn platform in action. This year's theme is the Information Superhighway, the new technology set to revolutionise the way we all communicate.

You will receive a Clan Acorn joining pack which includes an exclusive T-shirt, Risc PC enamel lapel pin, a Clan mouse mat, discs including a demonstration version of the *Toolbox*, and technology briefing documents about some of the equipment being considered for the Acorn platform *plus* a free Acorn World '95 ticket – worth £6 – which will get you into the show on the day of your choice. For a further £5 you can have a limited-edition Clan Acorn Risc PC sweatshirt.

To take advantage of this exceptional offer, complete and return the form below. The offer is limited to one ticket per membership.

Title: .... Name: ....
Address: ....
....
Postcode: .... Country: ....
Tel (home): .... (work): ....
E-mail: ....@ ....

❑ Please send me ...... Clan Acorn pack(s) and a ticket/tickets for Acorn World (one per pack). I enclose a cheque/postal order for £15 per pack made payable to Acorn Direct.

❑ Please send me ...... Clan Acorn pack(s) with exclusive Clan Acorn sweatshirt and a ticket/tickets for Acorn World (one per pack). I enclose a cheque/postal order for £20 per pack made payable to Acorn Direct.

If paying by credit card, please complete the following:
Credit card type: .... Expiry date: ....

Card No: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Name shown on card: ....
Amount: ....
Signature: .... Date: ....

Return the completed form to: Acorn Direct, 13 Denington Road, Wellingborough, Northamptonshire, NN8 2RL

Acorn's W
Mult

Acorn reveals more of its plans for the Acorn World show in October, and there is a Clan Acorn exclusive special offer for Acorn User readers.

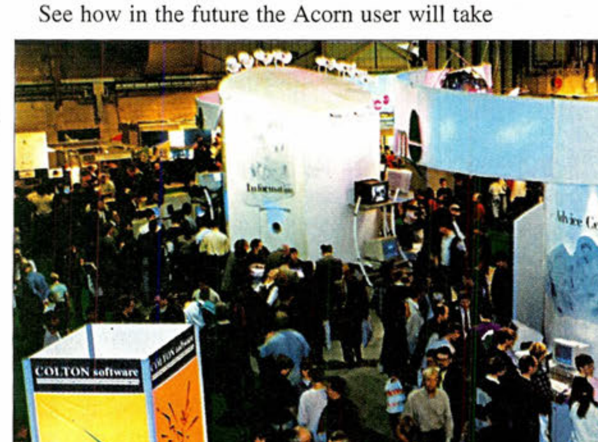
There's a definite buzz around Acorn at the moment, as the events planned for the biggest showcase of the year take shape. Months of planning culminate in special offers and exciting new product development – both hardware and software – which the users can see and try out for the first time. With the added dimension of the emerging Information Superhighway and its associated technology – the theme of the show – Acorn World '95 promises to be a mind-bending experience for all ages.

Exhibitor bookings, already up on last year, are being boosted by the recent announcement of Acorn's association with Microsoft, as more Internet servers and software suppliers come on board. Microsoft will be making its first appearance at the show – better late than never; other newcomers include Cirrus Software and Softease – and the majority of big names have rebooked. Exhibiting again this year will be Computer Concepts, Beebug, Alsystems, Aleph One, Nelson Multimedia and Academy TV, to name but a few.

A truly multimedia experience

In the multimedia area of the show you'll literally see and hear technology converge. Acorn equipment combines visual imagery, sound and information in a multiplicity of ways – from internal e-mail at its simplest to a new, altogether more sophisticated form of international communication which Acorn is keeping under wraps for the moment.

See how in the future the Acorn user will take



Acorn's busy stand at the show last year.

rld of media

on a more active and creative communications role than ever before, through:

- an Acorn-equipped creative study of the future, with multimedia workstation, video player, tape deck and digital video editing software, which produces creative imagery on the Internet. Create images and information that people on the other side of the world can pull up on their PC or TV screen.
- integration of Acorn computer system applications into TV technology.
- eight-channel digital 'surround sound'.
- the latest Online Media developments with links to a live recreation of the Cambridge Trial at the show (home shopping, banking, on-demand video and educational programs, plus games).
- a domestic CD player playing digital cinema movies.
- real-time capture of broadcast-quality video and associated editing.
- the latest connectivity between Acorn, PC and other non-Acorn platforms.

Theatre – the experts speak

Always topical, always packed, this forum looks set to be even more popular than last year, so get to a seat in good time. This year's titles include the following unmissable presentations:

Superhighway – the Internet: Acorn's Chris Cox demystifies a subject that we all like to think we already know about.

Superhighway – Online Media: Acorn's associate company explains how its technology is pioneering electronic banking, shopping, videos and education in our living rooms.

Publishing on the Internet: *Acorn User's* own Mark Moxon and David Matthewman show the future of electronic publishing and introduce the *Acorn User* WWW pages.

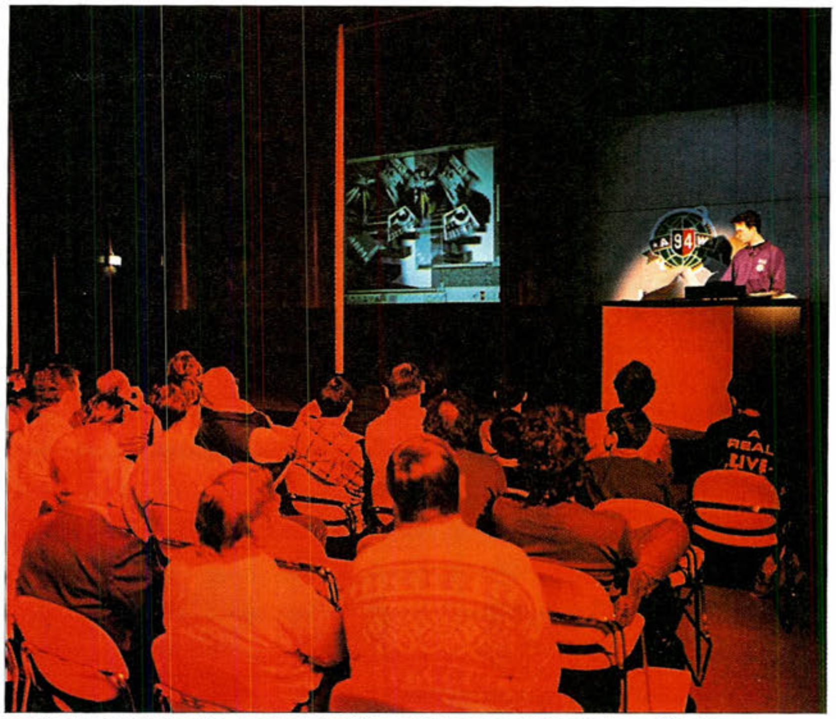
Give your child a head start: Acorn's Alan Bennett points the way to choosing educational software and hardware that's right for your children, and for the home environment.



Multimedia – myth or magic?: Acorn's Stewart Palmer shows how close to the medium of television and film multimedia can come, and how you can achieve it.

Making Music: Acorn's Jason Laroche proves that with some simple equipment and a little imagination you can create serious music at home.

StrongARM and other limbs: ARM Ltd puts its latest technology in context.



The Acorn World theatre – read all about the exciting presentations planned for this year.

Pocket Book portability: Geoff Lambrechts, IT co-ordinator at Lord Grey School, shows that small is beautiful.

First day; Special day

Underlining the fact that one in every six chidren has some kind of special need, on the first day of this year's show – Friday 27 October – Acorn is hosting a Special Education Conference. Preceded by a series of three forums held at different venues in the UK over the last six months, which included a call for papers, this one-day conference will focus on emerging issues in the important areas of special educational needs.

The conference will include the presentation of six selected papers by speakers who have established themselves as experts in the field of IT and special education. An audience of around 200 teachers, carers and special education co-ordinators is anticipated, and it is open to anyone interested in the area.

The conference fee of £20 includes entrance to Acorn World '95 and covers all conference papers and reports, coffee, lunch and tea. The conference starts at 10.30am and closes at 4.30pm. For more information contact the conference co-ordinator on (01223) 254410.

Coming soon

Watch out for more show news in next month's issue, as Acorn unveils its plans in more detail. We hope to have a sneak preview of the Acorn stand and more about the theatre, special equipment offers, games competitions and prizes you'll find at the show. Don't forget the P&O special offer detailed in last month's *Acorn User*. AU

CABLES & ADAPTORS

		Ex Vat		Inc Vat
Mains Lead 3 Pin Moulded 5 amp	*Computer or Printer Power Lead*	£3.70	a	£4.35
Mains Lead Extension M-F	*Computer to Monitor Power Lead*	£3.70	a	£4.35
4 Gang Extension	*1 Mains Socket converted to 4, Fused*	£6.50	b	£7.64
Parallel Printer Cable 1.8M	*Normal Printer Cable PC/Acorn/Atari etc*	£2.55	a	£3.00
Parallel Printer Cable 3M	*Normal Printer Cable PC/Acorn/Atari etc*	£4.55	b	£5.35
Parallel Printer Cable 5M	*Normal Printer Cable PC/Acorn/Atari etc*	£6.50	b	£7.64
Bi-Directional Parallel Printer Cable	*Fast Data Transfer Cable*	£11.00	a	£12.93
Centronics - Centronics Cable 2M	*Switch Box Cable*	£4.28	a	£5.03
Centronics - Centronics Cable 3M	*Switch Box Cable*	£6.50	a	£7.64
Serial Cable 2M 25 Pin M-F	*All Pins Connected/Printer Cable*	£4.28	a	£5.03
Serial Cable 5M 25 Pin M-F	*All Pins Connected/Printer Cable*	£8.50	b	£9.99
Laplink Cable 1.5M 25&9F-25&9F	*Data Transfer Cable Null Modem (X-Over)*	£8.50	a	£9.99
Midi Leads (Pair)	*Music Data Transfer Cables 5 Pin Din*	£8.00	a	£9.40
Phono Leads (Pair)	*2xPhono Transfer/Extension Cable*	£3.50	a	£4.11
Phono to Stereo Jack Convertor	*3.5mm Stereo Jack to 2xPhono Plugs*	£3.00	a	£3.53
VGA/SVGA Monitor Extension Cable 2M	*15 Pin HD M-F*	£6.50	a	£7.64
Keyboard Extension Cable 2M	*Curly 5 Pin Din M-F Standard PC Keyboard*	£6.50	a	£7.64
Keyboard Extension Cable 2M PS2	*Curly PS2/Risc PC M-F Keyboard Ext*	£6.50	a	£7.64
Mouse Extension Cable 2M	*9 Pin D Type M-F Extender Cable*	£6.50	a	£7.64
Joystick Extension Cable 2M PC	*15 Pin D Type M-F Extender Cable*	£6.50	a	£7.64
Joystick Splitter	*Allows the Use of 2 Joysticks on a PC*	£8.50	a	£9.99
A3010/3020/4000/5000 - Scart Lead 1.5M	*15 Pin HD D Type to Euroscart (Not Sony)*	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKI	*15 Pin HD D Type - 9 Pin*	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKII	*15 Pin HD D Type - 9 Pin & Phono Leads*	£8.50	a	£9.99
A3010/3020/4000/5000 - AKF17 & AKF30	*15 Pin HD D Type - 15 Pin*	£8.50	a	£9.99
SCSI 25 Pin D - Centronics	*SCSI Interface to External Box/CD or HD*	£12.00	b	£14.10
SCSI 50 Way IDC Ribbon Cable 1M	*Internal SCSI Cable (Can be Custom made)*	£ ASK	a	£ ASK
SCSI Centronics to Centronics 1M	*External Daisy Chaining/Switch Box Cable*	£14.00	b	£16.45
IDE 40 Way Cable 15" for 2 Hard Drives	*Internal for 2x3.5" IDE Hard Drives or CD's*	£3.00	a	£3.53
IDE 40 Way Sub Miniature Cable	*Internal Cable for 2.5" IDE Hard Drive 6cm*	£8.50	a	£9.99
IDE 40 Way Sub Miniature Cable Short	*As above but only 4cm long (A1200, etc)*	£7.00	a	£8.23
Panasonic CD Ribbon Cable 40 Way	*Internal Cable for CD ROM to Interface*	£3.00	a	£3.53
Panasonic CD Audio Cable	*CD to Soundcard/Interface for Audio CD's*	£3.00	a	£3.53
Sony CD Ribbon Cable 34 Way	*Internal Cable for CD ROM to Interface*	£3.00	a	£3.53
Sony CD Audio Cable	*CD to Soundcard/Interface for Audio CD's*	£3.00	a	£3.53
Mitsumi CD Ribbon Cable 40 Way	*Internal Cable for CD ROM to Interface*	£3.00	a	£3.53
Mitsumi CD Audio Cable	*CD to Soundcard/Interface for Audio CD's*	£3.00	a	£3.53
2xFloppy Disk Drive Ribbon Cable	*Internal Floppy Disk Drive Cable 3.5"/5.25"*	£3.00	a	£3.53
Power Cable Splitter 5.25" or HD/CD 2-1	*Splitter to add an Extra 4 Pin Power Lead*	£3.25	a	£3.82
Power Cable Splitter 3.5" 2-1	*As above but for 3.5" Floppy Disk Drives*	£3.25	a	£3.82
PS2 Keyboard Adaptor	*Converts Std 5 Pin Din Keyboard to PS2*	£3.50	a	£4.11
PS2 to 5 Pin Keyboard Adaptor	*Converts PS2 Keyboard to Std 5 Pin Din*	£3.50	a	£4.11
PS2 Mouse Adaptor	*Converts Serial 9 Pin Mouse to PS2*	£3.50	a	£4.11
Dongle Dangle 6cm	*For use on Restricted Access Computers*	£8.00	a	£9.40

For other cables not listed or specialist cables, please call with specification and we'll make it for you.

NETWORKING

	Ex Vat		Inc Vat
BNC Terminators	£2.00	a	£2.35
BNC Solderless Crimp Plugs	£1.25	a	£1.47
BNC Crimp Plug Cable Boot	£0.50	a	£0.59
BNC Inline Connectors	£1.50	a	£1.76
BNC T Piece	£1.50	a	£1.76
BNC Cable with Plugs 2M	£4.00	a	£4.70
BNC Cable with Plugs 5M	£8.00	b	£9.40
BNC Cable with Plugs 10M	£12.00	b	£14.10
BNC Cable with Plugs 25M	£19.00	d	£22.33
BNC Cable 100M Reel	£60.00	d	£70.50
NE2000 ISA PC Combo Card	£30.00	c	£35.25
NE2000 PCI PC Combo Card	£ POA	c	£ POA
NE2000 Notebook PC Adaptor	£85.00	d	£99.88
Access Card for Acorn - from	£85.00	d	£99.88
Repeater Hubs (Various)	£ POA	e	£ POA
Bridges (Various)	£ POA	e	£ POA

KCS are experienced in most types of Networking and can install a complete network from £300. Call for details or advice.

PRINTERS

	Ex Vat		Inc Vat
Citizen ABC 24 Pin Colour	£135.00	d	£158.63
HP Deskjet Portable	£150.00	d	£176.25
HP Deskjet 320/ASF/Colour Kit	£225.00	e	£264.38
HP Deskjet 540C	£ 225.00	e	£264.38
HP Deskjet 660C	£365.00	e	£428.88
Canon BJC600	£350.00	e	£411.25
Canon BJC4000	£299.00	e	£351.33
Canon BJ200ex	£195.00	e	£229.13
Canon BJ230ex	£ POA	e	£ POA
Canon BJ10sx	£169.00	d	£198.58
Epson Stylus 800+	£189.00	e	£222.08
Epson Stylus Colour	£345.00	e	£405.38
HP Laserjet 4L	£410.00	e	£481.75

CD ACCESSORIES

	Ex Vat		Inc Vat
CD Caddy	£5.00	a	£5.88
CD Disk Cleaner	£2.98	b	£3.50
CD Tray Flipper Holds 20	£2.55	b	£3.00
Empty CD Jewel Case	£0.50	a	£0.59
CD Protector Rings (Pack of 5)	£1.50	a	£1.76



office data

Novelty Mouse Mats	Ex Vat		Inc Vat
Hamburger	£3.56	a	£4.18
Pig	£3.56	a	£4.18
Clown	£3.56	a	£4.18
Ladies Top	£3.56	a	£4.18
Male Torso	£3.56	a	£4.18
Football	£3.56	a	£4.18
Cat	£3.56	a	£4.18
Mouse	£3.56	a	£4.18
Pen	£3.56	a	£4.18
Car	£3.56	a	£4.18
Motorbike	£3.56	a	£4.18
Frog	£3.56	a	£4.18
Cosmic Rings Screen Saver Set	£9.00	a	£10.58
Battlescape Screen Saver Set	£9.00	a	£10.58

Copy Holders	Ex Vat		Inc Vat
Paperclip - Monitor Arm	£4.26	b	£5.00
Copytravel - Portable	£4.26	b	£5.00
Copyplus Desktop	£7.50	b	£8.81
Copyplus Solid Base	£12.00	c	£14.10
Copyplus Flexible Arm	£12.72	c	£14.95
Copyplus A3 Extension Kit	£7.00	b	£8.23
Various Accessories			
Ergo Mouse Pad - Hard Mat	£4.26	b	£5.00
Ergo Mouse Tray & Wrist Rest	£6.00	b	£7.05
Mouse/Scanner Holder	£2.50	b	£2.94
Novelty Cat Mouse Holder Red	£2.50	b	£2.94
Novelty Cat Mouse Holder Black	£2.50	b	£2.94
Novelty Cat Mouse Holder Grey	£2.50	b	£2.94
Wildlife Mouse Mat	£4.00	a	£4.70
Wildlife Wrist Rest	£4.50	b	£5.29
Dinosaur Mouse Mat	£4.00	a	£4.70
Dinosaur Wrist Rest	£4.50	b	£5.29
Combo Pad Thick Mouse Mat	£5.25	b	£6.17
Keyboard Extenders	£16.00	d	£18.80
Keyboard Calculator	£4.26	a	£5.00
Keyboard Station (PC)	£15.90	d	£18.68
Wrist Support Fabric	£3.00	b	£3.52
Wrist Support Plastic	£4.90	b	£5.76
Disk Porter Ring Binder 3.5"	£4.26	b	£5.00
Disk Clips (3) Ring Binder 3.5"	£3.25	a	£3.82
Disk Pocket Leatherette holds 6	£6.00	b	£7.05
Disk Mailer holds 6 Reuseable	£3.50	a	£4.11
Monitor Swivel Stand 12-14"	£14.00	d	£16.45
Universal 2 Pce Printer Stand	£3.00	c	£3.52
As Above with Printout Tray	£6.50	d	£7.64
Stax 132 Column Printer Stand	£13.00	d	£15.28
Monitor Filters			
Economy Glass Filter 14"	£18.40	d	£21.63
Economy Glass Filter 15"	£21.50	d	£25.26
Economy Glass Filter 17"	£65.00	d	£76.38
Light Glass Screen Filter 12-15"	£56.00	e	£65.80
Dark Glass Screen Filter 12-15"	£66.00	e	£77.55
Privacy Filter 60% View 12-15"	£85.00	d	£99.88

INTERNET

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See Modem Section Below!

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10 out of 10 driving test	16.90	19.86
10 out of 10 early essentials	16.90	19.86
10 out of 10 english	16.90	19.86
10 out of 10 essential maths	16.90	19.86
10 out of 10 french	16.90	19.86
10 out of 10 german	16.90	19.86
10 out of 10 junior essentials	16.90	19.86
10 out of 10 maths algebra	16.90	19.86
10 out of 10 maths number	16.90	19.86
10 out of 10 maths statistics	16.50	19.39
10 out of 10 spelling	16.50	19.39
100 monotype font pack (look syst)	35.00	41.13
1st word plus (release 2)	17.50	20.56
2067 bc (oregon)	18.00	21.15
Archimedes assembly language disk	5.96	7.00
Advance integrated software suite	85.00	99.88
Advantage	43.00	50.53
Aggressor	12.50	14.69
Air supremacy (superior)	18.00	21.15
Alderbaran (arc-angel)	17.00	19.98
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All in boxing	12.50	14.69
Almanac (stallion)	73.00	85.78
Amazing ollie (storm)	14.00	16.45
Ancient greece (cha)	23.00	27.03
Apocalypse (4th dim)	7.00	8.23
Arcade 3 compendium	12.00	14.10
Arcade soccer	13.00	15.28
Arc comm 2 (longman)	35.00	41.13
Arc dfs	22.00	25.85
Arcendium game for arc	12.50	14.69
Arcfax	27.00	31.73
Arcfs 2	18.00	21.15
Archivist pro - database	35.00	41.13
Arc pcb	19.00	22.33
Arctist (4th dim)	18.00	21.15
Arcventure 1 - the romans	31.49	37.00
Arcventure 2 - egyptians	31.49	37.00
Arcventure 3 - the vikings	31.49	37.00
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Artisan support disk (clares)	14.50	17.04
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Blowpipe	12.77	15.00
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Borders	12.77	15.00
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Chocks away compendium	18.00	21.15
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Cycloids	15.00	17.63
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Demon's lair (4th dim)	18.00	21.15
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Archimedes disk rescue	28.00	32.90
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Easi writer 3 (icon)	115.00	135.13
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Font pack 1 (fabis)	12.77	15.00
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Genesis plus	45.00	52.88
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Play it again sam 18	18.00	21.15
Play it again sam 2	18.00	21.15
Play it again sam 3	18.00	21.15
Play it again sam 5	18.00	21.15
Play it again sam 9	18.00	21.15
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Powerband ii (4th dim)	22.00	25.85
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Provocator	15.00	17.63
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The real mccoy 2 (4th dim)	20.00	23.50
The real mccoy 3 (4th dim)	20.00	23.50
The real mccoy 4 (4th dim)	15.00	17.63
Redshift (minerva)	8.51	10.00
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Repton 4 - ego (superior)	14.00	16.45
Resultz	74.00	86.95
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Revelation 2 (longman logotron)	48.00	56.40
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Rosie & jim - duck pack (sherston)	10.00	11.75
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Small	18.00	21.15
Smart	46.00	54.05
Smart borders 2 (200+!imp borders)	12.72	14.95
Smart filer (4mation)	32.00	37.60
Smart graphics pack 1 (smart)	12.72	14.95
Smart resources 2 !draw format	12.72	14.95
Smudge the spaniel	17.50	20.56
Space city	24.00	28.20
Sparkfs	20.00	23.50
Speech! (superior)	16.00	18.80
Spelling	19.00	22.33
Spheres of chaos	18.50	21.74
Splash! (sherston)	17.00	19.98
Splice (ace)	29.00	34.08
Spobbleoid	18.00	21.15
Sporting triangles	10.00	11.75
Starch	9.00	10.58
Star/epson colour driver (beebug)	12.00	14.10
Starfighter 3000	22.00	25.85
Star lc-10 colour printer dump	5.00	5.88
Start write	25.00	29.38
Star xb24 colour dump	7.50	8.81
Street wise (brilliant)	20.00	23.50
Studio graphics 1 - egypt	8.51	10.00
Studio graphics 2 - flags	8.51	10.00
Studio graphics 3 - general	8.51	10.00
Studio graphics 4 - christmas	8.51	10.00
Studio graphics 5 - general	8.51	10.00
Studio graphics 6 - cartoons & borders	8.51	10.00
Studio graphics 7 - borders for poster	8.51	10.00
Studio graphics 8 - borders	8.51	10.00
Studio graphics 9 - greece	8.51	10.00
Stunt racer 2000	23.83	28.00
Stunt racer 2000 xtras (4th dim)	16.98	19.95
Style site licence for 40 users	710.00	834.25
Superior golf (superior)	12.00	14.10
Swift 24 colour sprite dump	11.00	12.93
Swift 9 colour sprite dump	10.00	11.75
Switch on (brilliant)	16.00	18.80
Swiv - budget (krisalis)	8.50	9.99
Symbol fonts pack	30.00	35.25
Talisman (minerva)	8.51	10.00
Technodream	17.50	20.56
Tech writer 2 (icon)	125.00	146.88
Tempest	8.00	9.40
Thundermonk (minerva)	8.50	9.99
Tiler (bright ideas)	10.00	11.75
Time detectives - victorians	31.49	37.00
The time machine	18.00	21.15
Tinas terrible trumpet (sherston)	10.21	12.00
Toolkit (clares)	21.28	25.00
Top banana (hex)	15.00	17.63
Topicart 1 general (bright ideas)	8.51	10.00
Topicart 2 transport (bright ideas)	8.51	10.00
Topicart 3 costumes (bright ideas)	8.51	10.00
Topicart 4 entertainment (bright ideas)	8.51	10.00
Topicart 5 bugs2slugs	8.51	10.00
Topicart 6 roadsigns (bright ideas)	8.51	10.00
Topicart 7 sports equipment (bright ideas)	8.51	10.00
Topicart 8 sports figures (bright ideas)	8.51	10.00
Topicart 9 dinosaurs (bright ideas)	8.51	10.00
Touch games 1 (brilliant)	20.00	23.50
Touch games 2 (brilliant)	20.00	23.50
Tower of babel compendium (cygnus)	21.28	25.00
Tower of babel (cygnus)	8.50	9.99
Tracer	29.79	35.00
Tracker	16.00	18.80
Trivial pursuit	20.00	23.50
Turbo driver for bj printers	38.00	44.65
Turbo challenge ii	20.00	23.50
Epson turbodriver	38.00	44.65
Turbo driver for hp printers	38.00	44.65
Turbo type	16.00	18.80
Typestudio (beebug)	37.00	43.48
Vector (4mation)	75.00	88.13
Virtual golf augusta pack	14.42	16.94
Virtual golf (4th dim)	24.00	28.20
Visual backup for arc (dabhand)	39.00	45.83
Voxbox (clares)	39.00	45.83
Warlocks (network23)	18.00	21.15
Waterfall learning curve pack Only Joking...Call	0.00	0.00
Wellington square characters	18.00	21.15
White magic 2 (4th dim)	8.51	10.00
Wimp game (4th dim)	6.00	7.05
Beginners guide to wimp programming disc	5.00	5.88
Wolfenstein 3d (powerslave)	22.00	25.85
Wordworks	33.00	38.78
Wordz (colton)	50.00	58.75
World scape	12.50	14.69
Worra battle	8.51	10.00
Worra cad (osk)	65.00	76.38
Wortgut (fabis)	17.02	20.00
Xenon 2	18.00	21.15
X-fire (4th dim)	12.00	14.10
Zarch	14.00	16.45
Zelanites	12.00	14.10
Zool (gremlin)	14.00	16.45

all software is delivery code A (£1.00) Most software in stock!

ACORN UPGRADES

	Ex Vat		Inc Vat
4-8 MB Up. (310,440,400/1)	£249.00	c	£292.57
4-8 MB Up. (A3000/5000)	£249.00	c	£292.57
Arm 3 (A3000/400) & FPA Socket	£114	c	£133.95
Arm 3 As above with FPA.	£179.00	c	£210.32
FPA Upgrade for A5000/540	£79.00	c	£92.82
A3010 1-2 MB Upgrade	£45.00	b	£52.87
A3010 2-4 MB Upgrade	£89.00	c	£104.57
A3010 1-4 MB Upgrade	£132.00	c	£155.10
A3020/4000 2-4 MB Upgrade	£83.00	b	£97.52
A5000 2-4 MB Upgrade	£79.00	c	£92.82
A3000 1-2 MB Upgrade	£52.00	b	£61.10
A3000 1-4 MB Upgrade	£114.00	c	£133.95
A3000 Serial Port Upgrade	£19.00	b	£22.32
A310 4Mb Upgrade	£137.00	c	£160.97
Risc OS Carrier Board (A310)	£22.00	b	£25.85
MEMC 1A Upgrade Kit	£29.00	b	£34.07
A400/1 1Mb Upgrade per meg	£45.00	b	£52.87
Risc OS 3.1 Up. Rom & Books	£75.00	d	£88.12
Midi Expansion Card	£79.00	c	£92.82
CD ROM Drives SCSI	£POA	d	£POA
CD ROM Drives IDE	£POA	d	£POA
Scanlight Junior Handheld	£175.00	d	£205.62
VIDI Archimedes	£55.00	d	£64.62
Hard Drives (Int) A3010/3020			
A3010 HD Interface	£69.00	d	£81.07
A3010 HD Int.Face & User Port	£79.00	d	£92.83
85Mb Hard Drive 2.5" IDE	£100.00	d	£117.50
120Mb Hard Drive 2.5" IDE	£110.00	d	£129.25
170Mb Hard Drive 2.5" IDE	£135.00	d	£158.63
210Mb Hard Drive 2.5" IDE	£155.00	d	£182.13
340Mb Hard Drive 2.5" IDE	£190.00	d	£223.25
Hard Drives (Int) A4000/5000			
420Mb Hard Drive 3.5" IDE	£149.00	d	£175.08
560Mb Hard Drive 3.5" IDE	£165.00	d	£193.88
520Mb Hard Drive 3.5" SCSI	£195.00	d	£229.13
1Gb Hard Drive 3.5" SCSI	£325.00	e	£381.88
Hard Drives (ext) A3000			
-A3000 Req Interface & Case:			
A3000 IDE Interface Podule	£69.00	d	£81.07
A3000 Hard Drive Case	£65.00	d	£76.38
210Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
420Mb Hard Drive 3.5" IDE	£149.00	d	£175.08
560Mb Hard Drive 3.5" IDE	£165.00	d	£193.88
Acorn Original Mouse	£25.00	b	£29.38
Acorn Replacement Mouse	£19.00	b	£22.33

RISC PC UPGRADES

	Ex Vat		Inc Vat
Risc PC 1MB VRAM	£70.00	b	£82.25
Risc PC 2MB VRAM	£189.00	c	£222.08
Risc PC Extra Slice & PSU	£99.00	d	£116.33
Risc PC Extra Slice (no PSU)	£39.00	d	£45.83
Risc PC Heavy Duty Keyboard	£64.00	d	£75.20
Risc PC Keyboard Extension	£6.50	b	£7.64
Risc PC Mouse Extension	£6.50	b	£7.64
Risc PC Mouse Mat (Rare)	£4.00	b	£4.70
Risc PC 2nd HD Fixing Kit	£6.00	b	£7.05
Risc PC Memory 4Mb	£118.00	c	£138.65
Risc PC Memory 8Mb	£236.00	c	£277.30
Risc PC Memory 16Mb	£365.00	c	£428.88
Risc PC Memory 32Mb	£768.00	c	£902.40

MODEMS

	Ex Vat		Inc Vat
14,400K External Fax/Modem	£115.00	d	£135.13
28,800K External Fax/Modem	£210.00	d	£246.75
Arcfax Software	£28.00	b	£32.90
ArcComm Software	£40.00	b	£47.00
Modem Cable	£8.50	b	£9.99

ARCSHARE

An ACORN to PC Network Software package for Under £80?



ArcShare Client

Arcshare offers an easy method of connecting your Acorn Computer to Any IBM Compatible PC.

Utilising Acorn Access network cards and Windows for Workgroups 3.11, it is possible for effortless Ethernet connections.

Arcshare offers unrivalled speed for transferring files with automatic filetyping at both ends. No more need for floppy disk transfers of worries about the file size. Even folders can be created & Files deleted from another machine!

For further information, call now for a Full Spec Sheet

	Ex Vat		Inc Vat
Arcshare Client v1.4	£79.00	b	£92.83
Arcshare Site License	POA		

FLATBED SCANNERS



	Ex Vat		Inc Vat
2400 dpi Flatbed Colour A4	£425.00	e	£499.38
1200 dpi Flatbed Colour A4	£375.00	e	£440.63
Transparency Adaptor	£210.00	e	£246.75
SCSI Interface (State Machine)	£99.00	d	£116.33

Full COLOUR Flatbed Scanners at Low Cost.

Upto 2400 Dots Per Inch Scaning capability (PC) and 600 Dpi using Acorn Software. Both Acorn and PC Scanning software supplied. Sample scans available - Send SAE & Disk.

MULTI - MEDIA KITS

	Ex Vat		Inc Vat
Twin Speed IDE CD ROM	£95.00	d	£111.63
Triple Speed IDE CD ROM	£135.00	d	£158.63
Quad Speed IDE CD ROM	£155.00	d	£182.13
Twin Speed SCSI CD ROM	£110.00	d	£129.25
Quad Speed SCSI CD ROM	£220.00	d	£258.5
External CD Box & PSU	£65.00	c	£76.38

MONITORS

	Ex Vat		Inc Vat
14" SVGA Monochrome	£79.00	d	£92.83
14" SVGA 0.39 Colour	£150.00	d	£176.25
14" SVGA 0.28 MPR2 Colour	£165.00	e	£193.88
15" SVGA 0.28 MPR2 Colour	£250.00	e	£293.75
17" SVGA 0.28 MPR2 Colour	£490.00	e	£575.75
20" SVGA 0.31 MPR2 Colour	£735.00	e	£863.63
Acorn AKF52 Med Res Colour	£200.00	e	£235.00
Acorn AKF60 Hi Res Colour	£295.00	e	£346.63
Acorn AKF85 As Above, 17"	£885.00	e	£1039.88

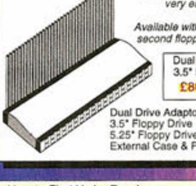
DUAL DRIVE™

Dual Drive adaptor which allows a second floppy drive to be added, either internally or externally.

Suitable for Risc PC, A3010, A3020 & A4000.

The dual drive adaptor is very easy to fit.

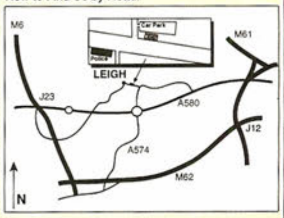
Available with or without the second floppy drive or case.



Dual Drive Adaptor, 3.5" Floppy & Case **£80.00 & Vat d**

Dual Drive Adaptor	£20.00	b
3.5" Floppy Drive	£25.00	c
5.25" Floppy Drive	£42.00	c
External Case & PSU	£45.00	d

How to Find Us by Road:



How To Order:

By Post - Send Full details of your order, together with payment details. Include your Name, Address & Phone Number. Always Include your Postcode.

By Phone - Our Staff will take all the necessary details over the phone, Your order will usually be sent the same day.

By Fax - As by Post - Fax No: **01942 672300**

Carriage Charges -
A=£1, B=£2, C=£3.50, D=£4.50, E=£6, F=£9.
a+a=B, a+b=C, a+c=D, c+b=E, etc Call if Unsure.

Letters

Good Acorn monitor

Regarding your editorial in the May *Acorn User*, I wonder if Acorn has got this message at last. The AKF60, which is the minimal monitor supplied with the Risc PC, really seems rather good. It competes excellently in sharpness and stability with 'ordinary' multisync monitors I have seen working on PCs down the corridor. I suppose it is too new to know whether it is reliable, though.

I do not think I am alone in liking the monitor. When I was ordering my Risc PC (which was before they were in very abundant supply), I ordered a supposedly superior 14in monitor to replace the AKF60. This was at the stage when Acorn had announced its 'enthusiast' scheme which made this possible. However, Norwich Computer Services recommended that I was wasting my money because their demonstration-model AKF60 seemed at least as good as my proposed alternative.

I suppose one should have a bigger monitor to do justice to the computer, but they are so huge (a fact not mentioned in the reviews) and take up lots of valuable desk space (apart from being rather expensive). I reckon a new pair of glasses is better value.

Philip Draper
Via the Internet

AKF18s for free

I read the May 1995 issue with interest, especially the column about the AKF18. I have one, which I bought with my A5000 two years ago, and it has gone wrong four times since. However, Acorn always repaired it under warranty, until I eventually had to pay for a repair.

I claimed the money back from Acorn through a fax, and surprisingly received a letter saying it would replace the monitor. I thought this would take weeks, but within a week of sending the letter, another AKF18, which I am assured does not have the same fault, arrived.

I am praising Acorn for its quick and courteous service. Hopefully, anyone who is experiencing the same problems as me can write to Acorn and get the same response. Well done Acorn!

K Patel
Surrey

Too many adverts

I have read your *Acorn User* magazine for a few months, and have now stopped. Yes, for a while I put up with the price of £2.95 and only getting 98 pages.

I worked out that in the October issue there were 98 pages, of which 38 pages were adverts, two pages were subscriptions, another page was for back issues, leaving in total 56 pages worth reading, making it over 20p per page. I'm sorry, but I just can't justify the expenditure. I have now noticed the price has gone up to £3.25.

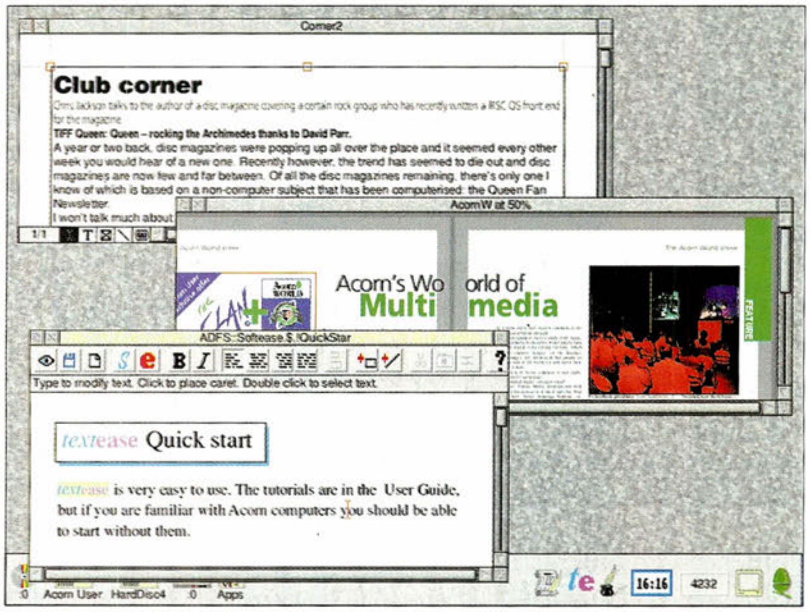
If there are so many adverts, why the high sale price? My friends who use PCs tell me they get much larger magazines for a fraction of the price.

I can't justify it. Can you? If you can, I would love to hear from you.

Joe Cole
London

Of course I can justify it. You've answered your own question when you say that PC magazines are cheaper and bigger – it's because they have far more adverts, so they can afford to keep the price right down. The Acorn market doesn't support that number of advertisers, as the demise of *Acorn Computing* shows.

We always carry the same amount of editorial coverage – normally 60 pages per issue – so fluctuations in size are down to the changing marketplace. Summer is a quiet time, and Christmas busier, and the size of the magazine changes to reflect that. However, for your money you are getting the best Acorn coverage this side of the Watford gap, as well as the cover disc, so calculating each issue's worth page by page is a little pointless. If you don't like the *contents*, then that's different, but the marketplace dictates our price, as with all computer magazines. (MM)



There are plenty of DTP packages out there, not just *Impression*.

Sleuth reaction

With reference to your review of *Sleuth 2* in the March issue, we feel it is important to point out that some of the points made were inaccurate and/or misleading.

The built-in spelling checker does not 'automatically replace words it thinks are wrong': the spelling checker augments the OCR process. It does this by allowing the program to identify combinations of letters that do not make correct words and suggesting words that might be more suitable. The algorithm can then re-check the data present to see if it fits any of the suggestions well. The process is far more complex than your article suggests.

Sleuth is criticised for not having a training facility and yet on your tests of a font not known to *Sleuth* you get up to 100 per cent accuracy.

Sheet feeding is a function of the hardware used and would be accessed through TWAIN, so we have no control over this function. Batch processing will be added to the next version of *Sleuth*.

Finally, our pricing policy has not changed, but our products and the amount of resources required to produce them have. You cannot produce an application of the complexity of *Sleuth* and sell it for the same price as its predecessor. If we did we would not be able to continue to create new applications of the standard of *Sleuth*.

Ian MacDougall
Beebug Ltd

Impression ad infinitum

I have read much in the Acorn press recently about 'industry standards' and how PC users should keep an open mind and not be blinkered. One observation I have on this requires the Acorn press – *Acorn User* included – to look at what they are writing themselves.

I am speaking of the continual references to Computer Concepts' *Style* and *Impression* family. Is there no other DTP package around? It seems to be referred to so often and

in such a way that nothing else is considered. There are many *Ovation* and *First Page* users out there who, I believe, feel left out. I have seen *Style* in use and agree that it is jolly good, provided you have something other than a base machine and are not using a standard Acorn monitor. Please give consideration to those at the lower end of the market.

I have bought a DTP application recently: it is neither of the above, it's *Textease* from Softease. I have found it to be very easy to use, and offers a host of features at under £30, which is amazing value for money.

C J Murray
Birmingham

It's inevitable that bias will occur when we use one product ourselves so much, and it's a market leader. Still, this month we've got a look at *Ovation Pro*, and next month we'll be looking at *Textease*, so we're not as biased as all that. (MM)

What's cooking

At first I lamented the loss of *Acorn Computing*. But now I find you have taken on Mike Cook, so all is not lost. I used to buy *Acorn Computing* because of Mike's excellent articles, among other things.

Alas, I started late in his series for that magazine so have not caught up with the knowledge needed to understand some of his articles. It appears, however, that he is starting afresh with *Acorn User*, which is good. Just don't forget that a lot of us have the A3000, so don't concentrate solely on the Risc PC!

R H Cumming
Cleveland

Mike has no intention of concentrating on newer machines only. In fact, his first article was all about a module which means all his parallel port projects – such as the racing car timer in this issue – will work on all Acorns, whether they have the new bi-directional parallel port or not. (MM)

Douse me in TAOS

After Quentin Pain's letter in June's *Acorn User*, I felt I should spell out a little more clearly why I think Acorn needs a totally new operating system. Next year will see StrongARM chips running up to ten times faster than the current ARM6. An expansion card carrying six of these would offer a machine with the potential equivalence of 50 Risc PCs in a single box within 18 months, but only if a good multi-processor operating system is available by then.

Trying to beef up old operating systems is expensive and doesn't work. Witness the Windows '95 fiasco. Writing a totally new operating system from scratch would be expensive, take too long and have little or no software available for it.

A partnership with other companies must be the only answer. If Acorn really is interested in TAOS, then one possibility would be a TAOS-based version of UNIX with an innovative Acorn front-end. This would be powerful, have everything on your published wish list and, more importantly, would surely be attractive to mainstream computer users.

As to Acorn's actual plans, who knows? I believe Acorn is now at a watershed, with its technology about to offer it the chance to be at the forefront of a computing revolution. To them, and to Quentin Pain, I would say 'look forward!'.

David Jewson
Loughborough

Erratum

Abject apologies to Dave Lawrence – yes, he of *INFO fame. It was Dave who took the cosmic fisheye shot of the A4 portable in last month's Letters page, but we forgot to credit him. Sorry Dave, you know we love you really.

Viewpoint

I love it when we do a reader survey. For one thing it gives an insight into who the typical Acorn user is, if there is such a thing. So here are this year's survey results, translated into English suburbia...

John is our typical Acorn user. I'm calling him a 'him' because 94 per cent of him is male, which is close enough. He doesn't know that Jane next door has an Acorn machine, but that's because he's a bit shy and his stomach gets butterflies whenever she says hello to him. His age is a bit tricky to pin down: he's either between 15 and 25, or between 40 and 50. John thinks his body is 45 and his mind is 20, just like the rest of us.

John's involved in education: he's either a student or involved in Information Technology somewhere along the line. He's tickled pink by his latest purchase, a brand new Risc PC. Although he uses a PC as well at work, he knows which he prefers, and it isn't the PC. He's really not into Macs or other types of computers – they just don't have what it takes.

His main use for his machine is at home for personal things like word processing and playing games. He's dabbled in programming and thinks that if he has the time, he'll try to write some of his own programs, just for fun. But it's just one of those things on his list, like fixing the guttering outside his bedroom window and getting his car serviced.

John's computer is pretty slick – he's got 8Mb of RAM, and he's got RISC OS 3, of course. He can't understand people who still use RISC OS 2; if he wasn't so shy he'd know that even Jane's A3000 has RISC OS 3 and 4Mb of RAM. John's also got a whopping hard disc, with 200Mb of storage.

It gives him a nice, warm feeling to look at the number of add-ons he's got. There's the printer, over there; the fancy monitor; the memory expansion. And when he eventually gets round to it, he'll get even more memory and a CD-ROM system, and probably another hard disc so he can run Windows with that PC card everyone's talking about. If hadn't already bought his Risc PC, he would definitely be buying one as his next computer.

He's also heavily into software: after all, what use is a fast and powerful computer if you don't have any software to run? He's got a word processor, a desktop publishing package, and lots of games. Then there's the spreadsheet, database and graphics package, all of which are great fun. The next purchase? More games, 'cos if there's something we all like in this world it's fun, fun, fun.

John's also keen to purchase a lot of his software on CD-ROM, when he gets his drive. Public Domain CD-ROMs are his favourite, followed closely by resource discs and encyclopaedias. Of course, games on CD-ROM are a good idea, too. All told, John will spend about £700 on hardware and about £150 on software over the next year.

He's also really into *Acorn User*, so is his best mate Colin who comes round for tea every week. Colin's a bit of a newcomer to the Acorn scene – he's just bought a second-hand A5000, at John's suggestion, and he loves it – but John's been reading *Acorn User* for well over three years, without missing an issue. Still, seeing John's been into Acorn machines for over six years, it's not surprising really.

His favourite bits of the magazine include the news section, anything to do with problem solving and hints and tips, and he just loves to read about desktop publishing. Overall, the amount of coverage on each subject is about right, but there could be even more problem solving and hints and tips in the magazine. He even likes the cover disc, and thinks it's better than any of the others he's seen. Bless him.

Life's cosy in the world of John, Jane and Colin. Computing is fun because they all own Acorns, not one of those nasty PCs John comes across at work. If only some strange neighbours would move in next door, or the house would turn out to be haunted by a friendly ghost, it could be a mid-evening situation comedy.

Mark Moxon

Vote in the *Acorn User* Awards 1995



It's that time of year when we decide who deserves to be patted on the back for excellence in the Acorn marketplace, and we need your help to vote in the four reader categories in the *Acorn User* Awards 1995.

To register your vote in the four categories of Best Product, Best Advert, Best *Acorn User* Article/Series and Best Dealer, fill in this form and post it to: *Acorn User* Awards 1995, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or e-mail your vote to awards@acornusr.demon.co.uk

Best Product: ______________________

Best Advert*: ______________________

Best Article*: ______________________

Best Dealer: ______________________

*Best Article and Best Advert from the August 1994 issue to August 1995 issue (inclusive). Best Article can be a series or a one-off article.

In brief

Under scrutiny this month: AppleFS • MacFS • Draw_Changer • Calc

MacFS & AppleFS

Product: MacFS
Supplier: Computer Concepts
Tel: (01442) 351000
Fax: (01442) 351010
E-mail: sales@cconcepts.co.uk
Price: £99 + VAT (full version)
£49 + VAT (floppy only)

Pros: Seamless integration with the Filer • Displays full Mac file name • Full version reads Syquests etc.
Cons: Won't read 720K Mac discs

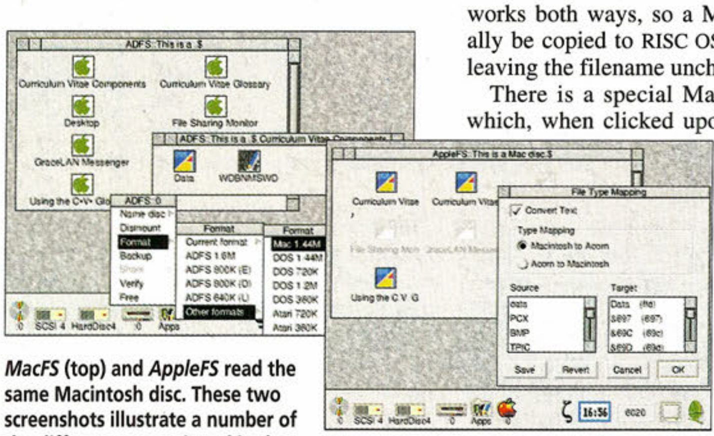
Product: AppleFS
Supplier: Oregan Software Developments
Tel: 0121-353 6044
Fax: 0121-353 6472
E-mail: sales@oregan.demon.co.uk
Price: £59.95 (no VAT)

Pros: Reads 720K Mac floppies • Nice configuration options
Cons: Not fully integrated with the Filer • Won't read Syquests

The Archimedes has been able to read and write PC-format discs practically since its launch, first through applications such as *MultiFS* and *PCDir*, then as an integral part of RISC OS 3. Mac discs have been a problem until recently, but now there are two products on the market allowing you to access them.

800K discs written by older Macs alter the speed at which the disc spins depending upon how far out from the centre of the disc the heads are. There is no way round this, and hence 800K Mac discs cannot be read on Acorn machines at all.

Fortunately, Macs these days have high-density 'SuperDrives' and a 1.44Mb disc format that can, in principle, be read by Acorns. However, Mac filenames can be up to 32 characters long and contain spaces, full stops and several other characters that the RISC OS Filer won't support. Also, Mac files are in two parts or 'forks': the *data fork* and the *resource fork*. Usually the data fork is the part which is of interest when transferring files, as it contains the data.



***MacFS* (top) and *AppleFS* read the same Macintosh disc. These two screenshots illustrate a number of the differences mentioned in the text, including the different way of displaying Mac filenames and *AppleFS*'s icon bar presence.**

MacFS

Computer Concepts' offering, *MacFS*, comes in two forms: one to read and write to 3.5in discs only, and one which will access Macintosh SCSI hard discs, Syquests and optical drives. It will only read 1.44Mb floppies, so needs an Acorn with a high density floppy disc drive.

MacFS is very unobtrusive in its operation. If you load it in your boot file, you hardly notice that it's there, except that suddenly you can read discs that previously gave the dreaded 'Disc not understood; has it been formatted?' error. The formatting menu on the icon bar acquires a 'Mac 1.44M' option as well; *MacFS* is completely integrated with the Filer, and Mac discs are treated as transparently as DOS and RISC OS discs.

Mac filenames are handled very well by *MacFS*. All 32 characters of the filename are displayed, and if you have *LongFiles* running on your machine they will be retained when the file is copied to RISC OS. Spaces in a Mac filename become hard spaces (character 160) in RISC OS and a '.' becomes '•'. The translation works both ways, so a Mac file can usually be copied to RISC OS and back again leaving the filename unchanged.

There is a special MacForks file type which, when clicked upon, opens a window showing both the data and resource forks. Files originating on the Archimedes keep their file type and are displayed just as they would be on a RISC OS disc, and will usually be recognised as having an appropriate type by a Macintosh.

AppleFS

AppleFS places a separate icon on the icon bar, rather in the manner of the RISC OS 2 program *MultiFS*, which straight away makes it more intrusive than *MacFS*. It also means that you need to know whether your disc is in Mac format or not before trying it – a real pain unless your disc collection is a lot more ordered than mine is. About the only advantage conferred by this is that *AppleFS* can display the whole disc name in the title bar of its Filer window.

Its Filer window actually *isn't* a Filer window. For instance, you can't delete files, rename them, view them as anything other than large icons or run them by double-clicking on them. Just about all you can do is copy them; while this is the most important feature, it's hard to see why the others weren't implemented. Copying single-tasks, and you can't copy over an existing file on a Mac disc.

Filenames are forcibly truncated when the files are copied, and all RISC OS-illegal characters are converted to underscores. Only 16 characters of a filename are displayed in an *AppleFS* window though full stops, spaces and so on are displayed correctly. Either the resource or the data fork of the file is displayed, and either or both can be copied from the disc.

AppleFS has a much better configuration panel than *MacFS* to set the mappings between RISC OS and Mac file types (on *MacFS* you have to edit the *!Run* file). It also reads, writes and formats 720K Mac floppies, a low-density Mac format with a few advantages over a 720K PC-format disc; it allows Mac-style filenames and can be read on Macs without SuperDrives. IDG's last Mac Plus died some months ago, but doubtless there are some of these beasts still out there.

To sum up, *AppleFS* is a very capable program, let down by the fact that *MacFS* does most of what *AppleFS* does better and with less hassle to the user – the floppy-only version is cheaper, too. A version of *AppleFS* to read Mac CD-ROMs is promised 'soon'.

David Matthewman

REVIEW

DRAW_Changer

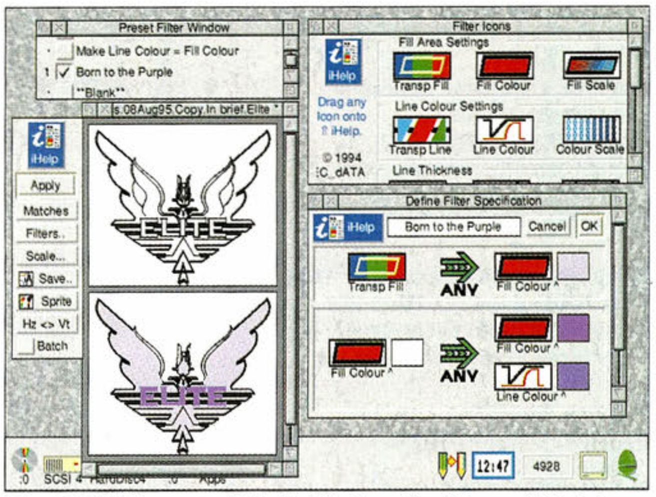
Supplier: DEC_dATA
Tel/fax: (01392) 221702
E-mail: info@decdata.zynet.co.uk
Price: £26.85 (no VAT)

Pros: Allows attributes of *Draw* files to be changed easily in bulk • Export *Draw* files and thumbnail or full size sprites • Online *ClearView* help
Cons: Deep sprites can only be produced on the Risc PC • User interface takes a while to get used to

The idea behind *DRAW_Changer* is simple: you take a *Draw* file and change the attributes of the elements in it – thicken lines, darken colours, remove fills and so on. All the changes are effected using filters which control which elements in the *Draw* file are altered.

A filter in *DRAW_Changer* is in two halves: a *condition* half and an *action* half. The condition half allows you to choose, say, objects with thin lines or blue fills, or text objects. The action half then tells *DRAW_Changer* what to do with the objects. Both actions and conditions can be combined so that you can tell *DRAW_Changer* to delete all red text, or lighten the fill and round the edges of all objects with a 4pt line.

The user interface to filters did take a bit of getting used to. It's perfectly logical, and the manual explains it well enough, but the design of the interface and the terminology used were unfamiliar enough to cause me a few moments of doubt. However, once I *had* 'clicked' I found it intuitive and easy to use, though there were a couple of niggles. Line and fill colours have pop-up menus associated with them, but thin lines, join style and cap style do not, even though it would be useful. One of the most useful features of *DRAW_Changer* is the way *Draw* files can be exported as sprites.



Using *DRAW_Changer* to fill in the *Elite* logo. The filter used fills in transparent objects with a light purple and white-filled objects with a darker purple. Both the start and end results are displayed in a window so that the effects of any changes can be seen.

These can either be thumbnails (anti-aliased to good effect) or full-size sprites. Since the *Draw* file can be magnified to more than fill the screen, sprites larger than the screen size can also be exported – in fact this is only limited by disc space. The latest version of *DRAW_Changer* will also export deep sprites (15- and 24-bit), although only on a Risc PC in the appropriate mode. '*DRAW_Changer's* use is very specific, but for tweaking the output from *Draw* to get the best results on a printer, or globally changing all thin lines to 0.25pt so that they don't disappear on an imagesetter, it is an excellent product. A demo version can be found on April's CD-ROM – the slightly updated version on sale now offers support for deep sprites and dashed lines.

Geoff Richards

Calc

Supplier: Circular Triangles
Address: 13 Woodhall Terrace, Juniper Green, Edinburgh EH14 5BR
Price: £25 (no VAT)

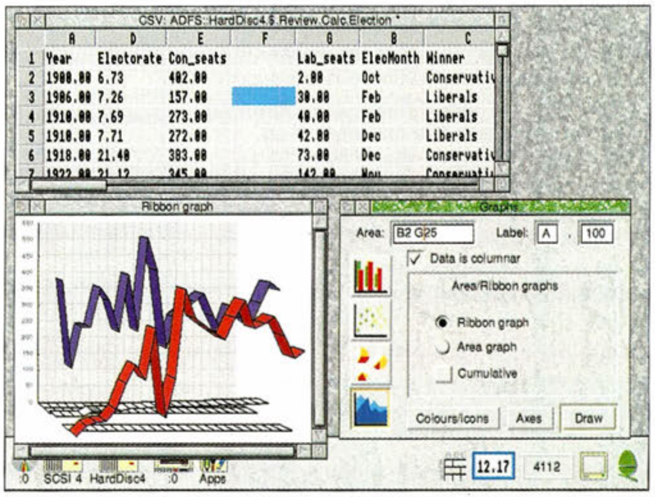
Pros: Fast and simple • Supports graphs • Cheap
Cons: Limited functions • No block operations • No interactive help

In the May issue I looked at two low-end spreadsheets – *TableCalc* and *ProSheet* – and mentioned that I would be looking at a third one called *Calc* once it had been updated. Well, here it is, complete with nice 3D graphs and an attractive start-up screen.

Looking back at the last two reviews, some of the same criticisms I levelled at the other two spreadsheets should also be applied to *Calc*. It won't export data except in a native format and as a CSV file, won't load more than one spreadsheet at a time, and won't allow mixed absolute and relative block references in the same operation.

In fact, the normal block operations (cut, copy, paste and clear) aren't available in *Calc*; the copy and paste function being accessed from a dialogue box. There is no concept of selecting an area of the spreadsheet; when you draw a graph, you specify an area by typing at a writable icon in the graph dialogue box.

Enough of the drawbacks – *Calc* has in its favour a simple design, allowing people who just need a basic spreadsheet with uncomplicated graphing facilities to use it easily. It is fast, and only occupies 400K of memory, an important consideration for those with lower-end machines. It has a limited range of functions – the same sort of range as you'd find on a normal pocket calculator – which should satisfy the low-end users at which *Calc* is aimed. Its lack of ability to import *Draw* files is, in a way, a good thing as it allows *Calc* to concentrate on being a spreadsheet rather than being a substitute page design package, though it would be nice if *Calc* sheets could be exported as *Draw* files for inclusion in DTP packages.



Calc offers basic spreadsheet facilities and graphs at an affordable price.

Calc offers four graph types: bar, scatter, pie and ribbon. A few more options to control the look of the graphs would have been welcome, but the graphs produced by default are attractive, and can be saved as *Draw* files.

At £25, *Calc* does the job you'd expect without trying to be over-ambitious. Certainly, many people will need the extra power of *Resultz*, *Eureka* or *Schema*, but for those who don't, *Calc* offers a cheap, serviceable solution.

David Matthewman

GAME SHOW

Before I start, thanks to everyone who's written in over the past couple of months. I've been receiving lots of information from programming teams wanting to tell you what they're up to, so you'll be seeing the results of that over the next few months.

Back to the present, and you'll be pleased to know that Tom Cooper, author of such diverse games as *Hamsters* and *Wavelength*, is working on a new title – currently being developed under the foreboding name of *Darkwood*. Coding is still very much in progress, but from what I've seen it promises to be another landmark game for the Acorn. I can't give too much away at the moment, but if you can imagine putting *Pandora's Box* and *Arcturus* into a blender and adding a generous squeeze of Tom's deliciously quirky humour, you'd be on the right lines.

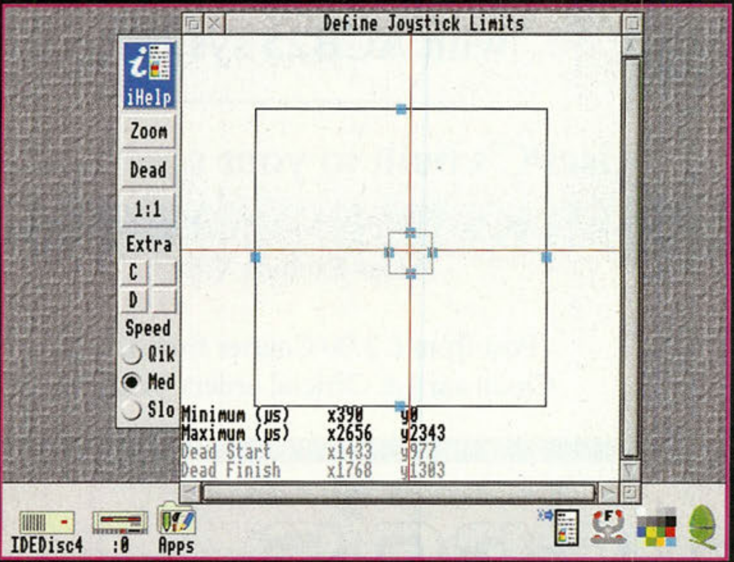
Flying with the Falcon

Magnetic Image released the Falcon Analogue, its joystick interface for 15-pin analogue sticks and yokes, at the Harrogate Spring Show, and I've been taking it for a test flight.

Why bother with an analogue device when you've got a perfectly usable joypad? Well, whereas a digital joystick broadcasts definite directions to the computer, an analogue stick sends a fractional movement value which allows more realistic control in certain games. The hardware consists of a small box that plugs into your parallel port in much the same way as a dongle. You'll have to buy a joystick separately if you don't already own one – the stick I was using was a Quickshot Super Warrior, complete with four microswitched fire buttons and a separate throttle control. The interface is reported to work with most joystick types, allowing you to pick your own personal favourite.

The setup options can seem a little bewildering at first, and this is probably the weakest part of the product. However, once you've played about with the software for a while it's fairly easy to tune the interface's operation. Be prepared to fiddle with the calibration to get it just right. Setting up a joystick requires instructing the interface about the stick's ranges of movement – after this has been completed, the fire buttons can be programmed. You can have up to four 'real' buttons, but if that's not enough you can emulate up to four more by pressing the fire buttons in sequence.

Analogue joysticks aren't effective in all cases, and the Falcon is only at its best for playing games controlled by the mouse; however, it comes into its own in the racing games and flight simulators of this world – *Star Fighter 3000* is certainly a prime candidate, as is *Elite* on this month's cover disc. The Falcon interface fills the analogue gap in the Acorn market, and allows dedicated players to get that little bit more out of their favourites. You can contact Magnetic Image for more information on (01376) 500590.



Setting up the falcon analogue joystick is a bit fiddly, but it can really improve the playability of a game.

The making of Detritus

I've been talking to Graham Tootell, alias Nikki, about the production of *Detritus*, the new graphics adventure by Myndgaemz.

What's the background to the game?

We decided to base *Detritus* on the Isle of Wight, which became the little island of Quarea. The idea of a nuclear holocaust dealt with the rest of the world, and neatly explained why these people had gone back to living in the middle ages. We chose to have a girl as the hero as opposed to so many games where the huge muscle-bound bloke goes off to rescue the poor, helpless little girl – this time, it's the girl who sets out to rescue her weak little boyfriend, kidnapped by a Daemon by the name of Arrut Loopaz.

We chose the Old English spelling of *daemon* to avoid the connotations of black magic and Satanism associated with demons. A daemon in the Old English sense merely meant an unexplained entity, something that doesn't appear to fit in with this world, so had 'magical' powers.

How did you manage to capture the atmosphere of the game?

One of the Myndgaemz team had managed to get permission to shoot the footage at Little Woodham, the Gosport 17th century village, for which we are eternally grateful. It was the perfect scenery for what we wanted and because he was part of the Living History society we could also get authentic costumes and artefacts.

Were you able to use the photographs directly, or did you have to do some editing?

Very few of the scenes are actually completely 'real' – most have been made by cutting and pasting bits of other pictures together. My favourite has to be the temple to Arrut Loopaz, which consists of a section of car park blended with part of a well-known shop, with all identifying features removed. People always tell me that I forgot to edit out the words 'Electrical Store' from the top of the shop – this amuses me as I deliberately put them there myself!

Have you got anything planned for the future?

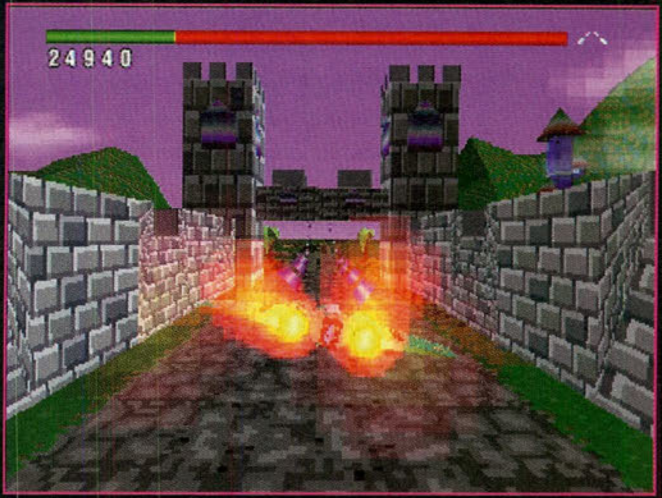
As far as future projects go, there was talk of the *Blue Moon* project, based on a futuristic spaceship that's been taken over by terrorists – it might well be on CD-ROM as it could feature full-screen video animation and speech. The *Myndgaemz Video Compression System* can now compress pictures even further than our previous method at better quality. We're not sure whether *Blue Moon* will go ahead yet; we might concentrate on selling MCVS separately, so we'll have to see how things go.

If you'd like some more information about *Detritus*, you can contact Byte Back Computing at 0115-955 4501.





Light-sourced 32-bit graphics make *Starfighter 3000* on the 3DO far more realistic than its Archimedes counterpart.



Star Fighter 3DO

Last month, I mentioned that Krisalis was responsible for an imminent conversion of Fednet's superb three-dimensional blastfest, *Star Fighter 3000*, for the 3DO multiplayer. Since then, I've been able to dredge up some more information, so if you've ever wondered how *Star Fighter* could be improved, here are a few of the details.

Firstly, all the graphics for the game are now displayed in gorgeous 16-bit colour, and everything's textured, light sourced and depth cued to make the landscapes seem that bit more 'solid'. The expanses of water, which used to remain unnervingly still, now undulate – and the ships and submarines rock with the waves, making them even harder to hit. In terms of ground targets, you've now got tanks and lorries to contend with, and they're armed as well as mobile.

One point of criticism levelled at the original game was that an internal view wasn't available – this has changed with the 3DO version and now you can play Star Fighter as if it were a flight simulator. The game runs at about 15 frames per second, which isn't bad considering the amount of extra detail squeezed into the code. I've been lucky enough to lay my hands on some screenshots from the game, so take a look and prepare to be amazed.

Hang on a moment, though – why am I covering a 3DO game in an Acorn-based column? I suppose it's because I've followed *Star Fighter* from its initial demo versions, and I'm proud to see it make the quantum leap from the Acorn platform to the big, bad world of the consoles – I'll be particularly interested to see how it's received. Many thanks to Rob Wyatt of Krisalis for furnishing me with the information, and of course Andrew Hutchings and Tim Parry for writing the game in the first place!

And finally

Well, that's all I've got time for, but next month I'll be taking a look at methods of improving your chances as mayor in *Sim City 2000*, as well as divulging a few hints for the strategy game *Dune II*. If you've got any playing strategies or tips that you want to share, or you just want to drop us a line, here's how to contact us. You can write to us at: Game Show, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP.

If you're plugged into the Internet, you can also reach me, Steve Mumford, by e-mail at: HAL@acornusr.demon.co.uk.

Steve Mumford

Star Fighter codes

I've had an amazing response from the *Star Fighter* fans out there, so thanks are due to Phil Norman, Rob Wyatt, Daniel Shimmin, Malcolm Leadbetter, Damian Le Gresley and anyone else who's contributed. Phil has even given each level an enjoyment rating, so here are a few of his favourites – the full listings are on the cover disc.

Easy
Level 25: L8CL15QORE8
Level 30: VMQ9VVGMLCA
Level 34: D39R3E98168

Medium
Level 15: 981G9AL42N3
Level 19: K7PHBB470N3
Level 24: BO4ADSPTDM2

Hard
Level 12: B9S04TH251B
Level 17: 57OA4LH2D9B
Level 31: TDOA7UH1DBB

Smile please, you're on a

So, you've taken the plunge and bought yourself a brand new shiny CD-ROM drive or, like my school, you were successful in your bid for an NCET CD-ROM Initiative system. Now what? The early years children have read the Naughty Stories and the older ones are happy using Hutchinson's Encyclopaedia for a spot of research. It's not too long before you find there is a relative scarcity of CD-ROM titles for Acorn machines. What do you do?

Well, you could wait a while, because there are certainly more titles coming along and they're even appearing on magazine covers. Better than waiting, though, would be to take a little time out to investigate Photo CD. It's inexpensive, it's easily linked to most, if not all, of the National Curriculum subjects and, best of all, the material stored on it can directly reflect pupils' own interests and experiences.

Photo CD and IT

My experience with Photo CD started last summer after our Year 5 pupils made their annual residential visit to Whitby and our Year 6 pupils went to France. We did the usual thing and made a photographic record of their experiences but I wanted them to do something different with it and, if possible, integrate it into their IT. As it happened, we had just received the NCET system and I wanted to do what I could to explore it with the children before they left us for high school. What better way to get them involved than by using it to display manipulated images of them on their journeys.

Transferring images to Photo CD is easy to arrange and any number of high street chemists, including the large national chains and smaller independents, will do it. My local independent chemist will take exposed film and arrange for it to be transferred for just over £12 for a 36 exposure film plus £4.99 for the CD. If you don't want the whole film to be transferred then single images from negative strips cost in the region of 40p each, more expensive but more selective. The process takes five days for normal colour film and twice that for slide film or black and white.

Having collected the CD it is a quick and easy job to see the results by using Acorn's *Photoview* which seems to come bundled with most CD-ROM drives. Clicking on the application on the icon bar causes it to read the CD and display the photographs as a series of small thumbnail images. Using an 800x600 screen on my Risc PC, for example, it will display the first 12 images with the rest accessible by dragging the window's slider.

For a proper screen-sized look at an image it then takes just a few seconds for *Photoview* to process the data on the CD and come up with a stunning full-screen picture. Kathryn and Susan, my fairly blasé daughters, are used to me yelling 'Have a look at this!' when I'm playing with a new toy, but both were more than a little impressed when they saw the quality. In fact they were so impressed they actually wanted to search the CD to check out the photographs of the cat (who also seemed to be pleased with the results).

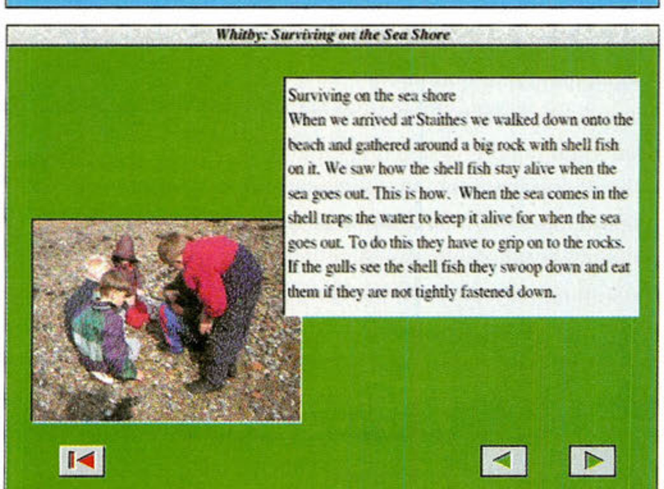
Creating presentations

Using the computer simply to display the images was a start, but actually manipulating them and using them in some kind of multimedia presentation was what I wanted to do at school with the children. After a little experimentation, I decided to work in two separate ways.

The first was to produce a slide show of selected and suitably captioned images. Pupils used the contact type prints which came with the CD to choose a number of images which would help them tell the story of part of the visit. This was done by loading them into *Photoview* and then transferring them into *Revelation* where the text tool was used to add a caption in a colour and font of the children's choice. Once completed, the images were saved into a separate directory using numbers for names to ensure that the order in which they were shown could easily be controlled. Dragging the directory onto Roger Wilson's *Picture* application then created the rolling slide show.

The second presentation we created used *Genesis Professional* from Oak Solutions. Although more difficult to set up, *Genesis* offered the opportunity to include





***Genesis Professional* was used to create a multimedia presentation. Here, using Photo CD images, pupils recorded a visit to Whitby, and worked on a presentation based on the visit.**

Frank Jukes takes a look at how Photo CD can help your school's underworked CD-ROM drive be better employed.

plastic disc!

more text with our images and sound as well.

Having set up a master page and discussed with the children which areas they thought they should report on, the children produced their text and entered it directly into *Genesis*. Images from the Photo CD were then selected and used to illustrate the text by dropping them into their own individual pages or into specially created frames on text pages. Just to extend the work a little more we then used *Black Box* from Focus IT to sample the children reading page titles which were then dropped into frames on a contents page.

Overall, the presentations worked extremely well and the children (and their teacher) were delighted with what they had produced. The skills they had learnt and practised were not inconsiderable and it is noticeable that they are now more confident and adventurous when using the computer to display and report on their work.

Problems

There were, quite naturally, problems along the way though, and the first of these concerned *Photoview* which, as each thumbnail image is displayed, gradually eats up more memory. With up to 100 images available on a CD this is not much of a problem if you want to use, say, the fifteenth, but it's not so good if you want to use the 95th. The school's 4Mb A5000 coped well, began to struggle, and then eventually failed to convert the thumbnails as did my 5Mb Risc PC. After quitting all unnecessary applications, reducing the font cache and trying all else I knew would free up memory, I still could not display the higher numbered images. A different approach was called for which, after a lot of head scratching, turned out to be fairly straightforward. *Photoview* was used to display the thumbnails to choose the image and then the relevant file was dragged straight from the Photo CD into *ChangeFSI* to allow it to do the conversion. Later on we bypassed *Photoview* and chose the images directly from the contact sheets before dropping them onto *ChangeFSI*.

Other problems concerned the slide show and *Genesis* specifically. In the first we found that portrait-oriented images would not display correctly as they were 'too tall' for the screen. Although we felt that some were potentially very useful, we decided it was important to produce a presentation that looked right, so we would not use them unless the part of the picture we wanted was the part displayed and the image did not look unbalanced; fairly obvious I suppose really, but it caused some useful discussion at the time.

The main problems with *Genesis* concerned the need to drop correctly-sized images into the page and the overall size of the completed presentation. Dropping in images directly from the Photo CD did not work as they came across full size and swamped the page. Re-sizing them in *Paint* solved this but added another task into the process. This problem was also linked to the problem with the overall size of the presentation, in that the images were large and took up a lot of disc space. Put alongside the sound samples and the children's text we found we had problems using floppy discs to transfer the work from one machine to another, and eventually had to compromise on what we wanted to do.

The problems, though, were not overwhelming and served to concentrate our minds. The most important thing was that we had explored another aspect of IT and found that it offered a lot in terms of increasing and extending skills, and in allowing us to present reports in a more exciting and interesting way.

Future projects

For the future, I think Photo CD may well offer staff opportunities for record keeping by using the multi-session capabilities of the medium, which allows many different sets of pictures to be recorded on one disc at different times. We already record pupil's achievements in subjects like design technology by taking photographs. If these were to be transferred to Photo CD as and when they were taken, the problems of storage would be greatly reduced, they would be more secure and less easily damaged, and it would also be possible to create a school portfolio to show how work through the school might progress.

In the meantime, we will certainly be exploring and exploiting Photo CD again to enhance and extend work following our 1995 visits, and then most likely to create a presentation based on 'Our School'. AU

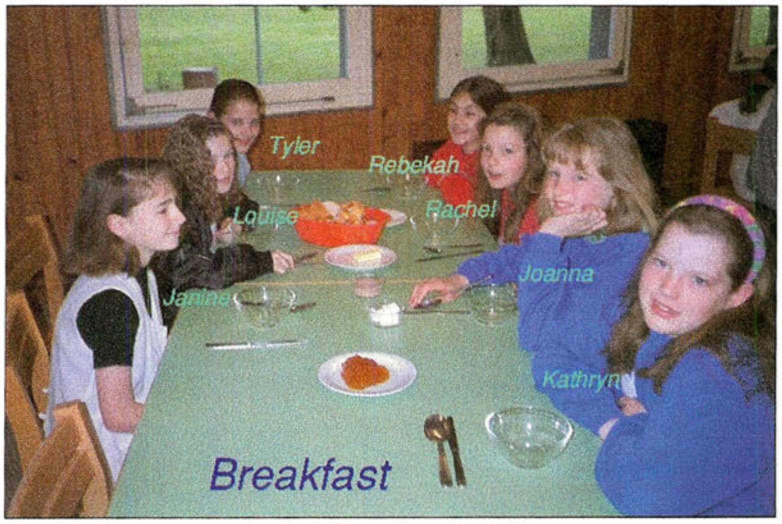


Photo CD offers an excellent method of recording school visits.

Postcards from Harrogate

Geoff Preston recalls some of the highlights of the Acorn User show.

For 51 weeks of the year, my only contact with people from the Acorn world is either on the telephone, by e-mail or letter. Some people I do see regularly, but most are just voices at the end of the phone. The *Acorn User* exhibition is a chance to put some faces to names and to thank all those who have helped me during the year, both as writer and teacher.

Apart from all the companies who made the show successful, two schools had some of their students there working on Acorn Computers and producing some quite excellent work.

On Saturday, the pupils from St Peter's C of E Primary School in Harrogate showed us what they could do. Using *Phases* and *Splosh* they produced some flyers advertising what's on in Harrogate, including snippets of information about the *Acorn User* Show. As you can see by the quality of the work, they certainly knew what they were doing. Dominic Diamond was the celebrity for Saturday and he was clearly very impressed by the work.

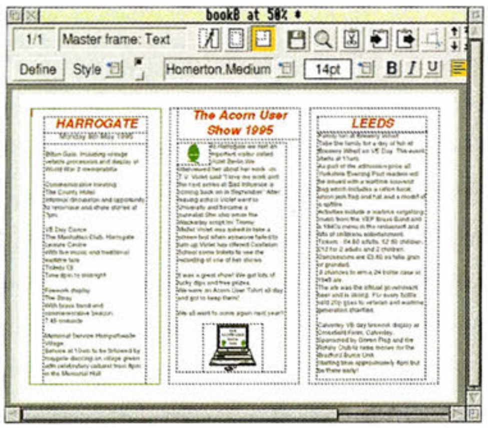
Equally impressed was Violet Berlin who was Sunday's celebrity. She spent a considerable amount of time with the pupils of Castleton Primary School in Leeds. They were using *Impression Style*, *Paint* and *Draw* and produced some superb two-fold pamphlets containing text and graphics relating to VE Day, with some additional pieces on the *Acorn User* Show. I was continually having to remind myself that these were primary school children and not a group of teenagers just about to take their GCSEs.

Our very sincere thanks to all the pupils who came along to show us what they could do, and a special vote of thanks to the teachers who gave up a great deal of their time. The two schools will each receive a one year's subscription to *Acorn User* by way of thanks.

Sherston also had groups of children using its software, in particular some of the Sherston talking books. It never ceases to amaze me how young children will walk up to a computer and just start using it. Adults usually stand back and wait for a lead from their children. AU



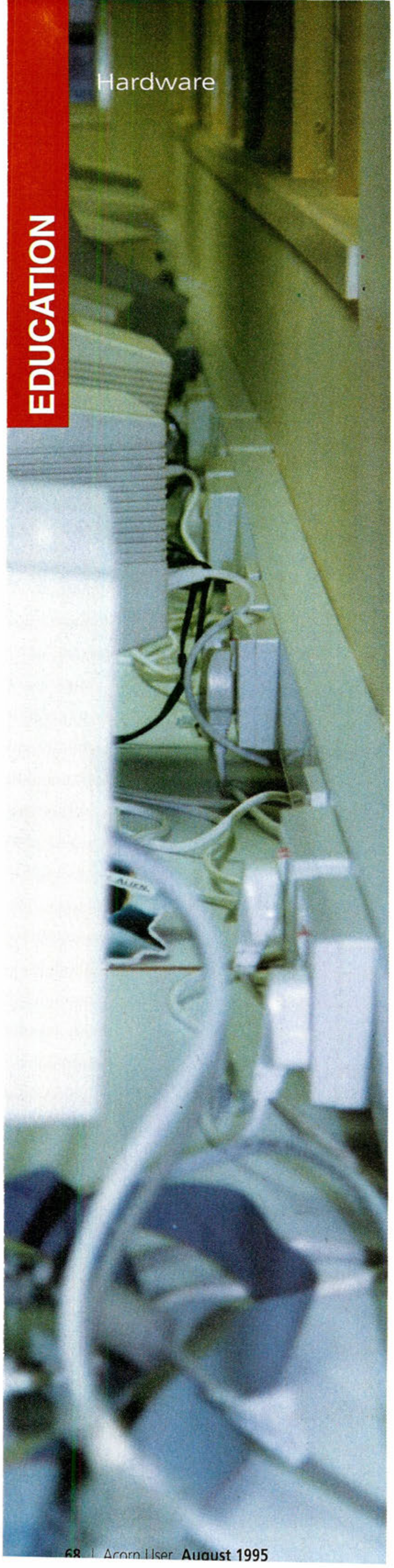
Sherston's bustling stand deservedly won one of the show awards.



The pupils from Castleton school produced a superb two-fold pamphlet using *Style*.



An editorial conference among the pupils from Castleton Primary School in Leeds.



Setting the

Bill Lamin, director of Information Technology at Pool School and Community College, looks at Acorns in the classroom and suggests some minimum specifications.

My sister is a very experienced primary school teacher. Recently we talked a little about work, (I'm a teacher, but in a secondary school) and it soon became clear that she was quite disappointed with her classroom Archimedes computer. It was obvious that her machine, a basic A3000, was not at all up to the demands of a busy classroom.

I suspect there must be hundreds of similar classrooms across the country with relatively modern computers that are not being used effectively. Within every one of these, a teacher will be feeling very insecure and inadequate. Of course, the problem lies, not with the teacher, but with the hardware standard. It's not enough just to buy a modern computer. Non-specialist teachers need a properly equipped and prepared machine or they are certain to fail to realise its potential. Without doubt, the great value of the new technology is, in many schools, being spoiled for a ha'p'eth of tar.

MESH

Some years ago, one of the Spence-Jones of S J Research fame produced a document entitled *MESH – Minimum Education Standard Hardware*, outlining the minimum configuration for a BBC computer to be effective in the classroom. At the time we thought that it was a great document – especially as most of our computers met the standard – and promptly used it as a lever to get the money to upgrade the rest.

Now it appears that there is justification for an updated version of *MESH*. Many classroom teachers are making desperate efforts to make effective use of totally inadequate machines. Even one of our major teacher training establishments in the south west is expecting its embryo teachers to sample woefully basic Acorn machines. I can define a current minimum standard for Acorn machines, a standard that should apply throughout the four key stages. I am sure that someone else could produce a similar specification for other platforms – PCs and Apples. If we are expecting non-specialist teachers to use computers in their classrooms, then we must ensure that they have the equipment that they need.

Beware of floppies

Floppy discs and their drives are a crucial weak point in any system – especially in a classroom environment. The discs are not child-proof. The disc drives contain moving parts and there are different standards of disc and disc drive. Discs are not interchangeable between standards. Once damaged, a disc is worse than useless. As it 'looks' OK, a problem probably won't be discovered until it's too late and a lesson is ruined. The last thing a teacher with 30+ kids needs is a stubbornly dead disc – the whole package is a potential disaster.

Every machine should be fitted with a hard drive or, better still, networked. Then, all these irrelevancies can be forgotten. The software is instantly, simply and – above all – reliably available to pupils. Networking is by far the better solution, but this may present problems for a small primary school. As an alternative, a hard drive could be partitioned, with the applications protected from pupil tampering. On a relatively small (80Mb) drive, a primary school should be able to store all its applications and still have a few Mb left for pupils' work. It may (just) be acceptable for pupils to use floppies for saving their own work but, if so, it shouldn't come as a great surprise to find any spare hard disc space filled with *Lemmings*, *Pacman* or even worse. In my school, everything is networked and the floppy disc drives are disconnected.

Memory and operating system

About two years ago, Acorn introduced a new operating system, imaginatively called RISC OS 3. It replaced (you've probably guessed) RISC OS 2. The new system offered many advantages, so new software started to be written around it. Sadly, the newer software often doesn't work on machines fitted with RISC OS 2. Unless you want to be stuck with the ancient, obsolete software, all computers must be upgraded to RISC OS 3.

The working memory of a computer is

Technology Matrix
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Discount

standard

termed RAM and is measured in megabytes (Mb). Older machines left the factory fitted with 1Mb of RAM which was quite adequate for most programs. Now, new machines are sold with 2Mb of RAM and the software writers are producing programs that use this extra capacity. Indeed, for many of the new applications, 2Mb is proving inadequate, and even mildly serious users are upgrading their machines to 4Mb. (*Impression*, *Fireworkz* and the like will struggle with only 2Mb.)

2Mb is the very minimum, but be prepared for a revision of this standard to 4Mb in the very near future.

Don't settle for second best

That's it then: network or hard disc, RISC OS 3 and 2Mb of RAM. If you have better, smile. If you're expected to cope with less, then shout and make a fuss. Your school is wasting valuable resources – you as a teacher, as well as your computer. If nothing happens, switch off your computer and wait for OFSTED and explain to them why it isn't being used. A computer specialist may cope, but many IT co-ordinators fail to realise that the result of giving inadequate hardware to a non-specialist classroom teacher is likely to be considerable frustration, insecurity and a significant waste of valuable time. The computer will be used only for 'safe' non-demanding applications and will fail to repay the considerable financial investment. Worse still, the poor teacher, already under pressure from other directions, will reject this potentially valuable resource.

You must move to this minimum standard. Once your computer is there, your IT specialist or advisory team can easily load in software and then you just point the kids at it. Everything should be easily accessible and, more importantly, work every time.

Take this article to your Head and/or Governors – try the Parent Teachers Association, but don't settle for less. AU



For £225 the A3000 can be brought up to a reasonable specification that will run most modern software – could you say the same of a six-year-old Mac or PC?

What will it cost to upgrade?

Technology Matrix in Manchester has agreed to some upgrade deals for *Acorn User* readers from educational establishments; our thanks to it. To claim this special discount on the following products, cut out the token at the top of the page, fix it to an official order form from your school and send it to: Technology Matrix, 89A Stockport Road, Denton, Manchester M34 6DD (all prices exclude VAT).

Case study 1: a basic A3000 with 1Mb RAM, RISC OS 2 and no hard drive. This is a typical classroom failure machine. But for £225 it could be made into a more usable machine.

1. 80 Mb Hard Disc	£155
2. RISC OS 3 Upgrade(No manuals*)	£ 37
3. 1 to 2Mb RAM upgrade	£ 58
Less £25 discount from Technology Matrix	£225 including discount

*The last thing a classroom teacher needs is yet another computer operating system manual. Anyway, they are free with every new computer, so your school probably has several sets still shrink wrapped!

Upgrading the A3000 sounds expensive, but there is little real choice if the machine is to have any value at all. Once it is upgraded, it can be used effectively in the classroom with a wide range of the latest exciting classroom software.

Case Study 2: an A3020 floppy disc system – a 'Tesco tokens' gift. This will already have RISC OS 3 and 2Mb of RAM.

1. 80 Mb hard Disc	£109
less £20 discount from Technology Matrix	£89

A basic network kit is relatively cheap. Once one machine is set up as a server, about £140 per machine will allow all machines to share resources through Acorn Access. There is an additional cost, but the extra benefits from networking are also significant.

You need a confident technical type to fit the bits: nothing too sophisticated, as none of the fittings are difficult and the instructions are very clear. Technology Matrix is happy to provide a free 'real time' telephone support for any DIY upgrades.

EDUCATION

Clickety click

Geoff Preston reviews Clicker Plus from Crick Computing, and suggests some practical uses for the program.

Since its launch late last year, *Clicker* has very quickly established itself as a major software product. For the benefit of those who haven't used it, *Clicker* (at its simplest level) is rather like *Chars* which is found in the Apps folder on the icon bar. *Chars* displays a window containing the full character set and clicking on a character will print it at the current carat position.

Clicker takes this concept further by enabling the user to transfer whole words or even sentences in the same way. Even better is the fact that grids can be very easily constructed for a whole variety of uses. On the education disc distributed to *Acorn User* subscribers last year was a *Clicker* file which displays a number of chemical names. When you click on the name in one of the cells, it prints the chemical formula for that chemical at the carat, thus demonstrating that *Clicker* can be programmed to 'translate.'

Not surprisingly, the program is used in many diverse ways – probably more than the author originally envisaged. One way the author had intended *Clicker* to be used is by students with special needs, including those with physical difficulty. Because *Clicker* can output commands to the computer, it can be used for loading programs and files, all from the click of a mouse button. However, Crick Computing has also produced a version called *Switch Clicker* which enables the whole system to be controlled by a single on/off switch. This could be a foot operated switch, a tilt switch or any two-state device.

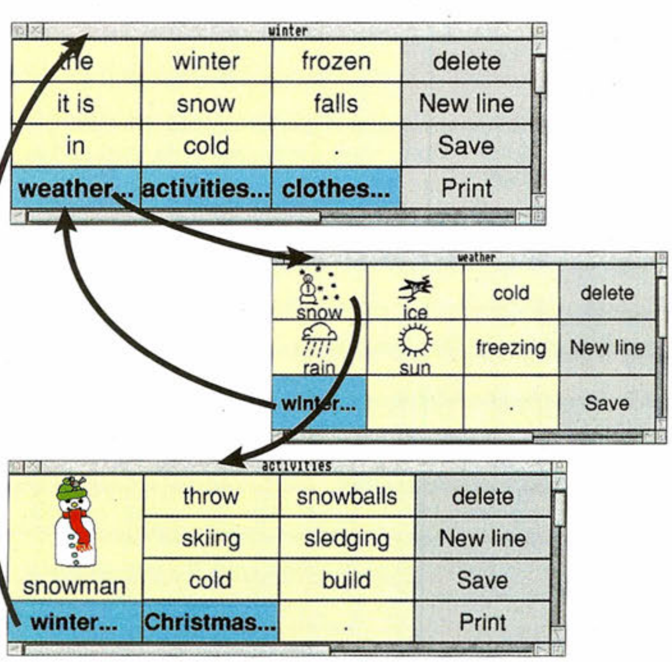
The latest version of this program, called *Clicker Plus* (with the switch version called *Switch Clicker Plus*) does everything the previous version does, but a lot more besides. *Clicker Plus* is a well presented package which immediately exudes quality. It comes in a sturdy grey A5 folder, with a well written spiral bound manual. The program is on a single disc, and there are two additional discs containing examples of grids and multimedia presentations. My only criticism is that some of the pictures in the manual have not reproduced well. If a book is to be reproduced by so-called 'photo-typesetting' (effectively photocopying onto a printer's plate), it's better to avoid 3D icons.

Clicker has evolved into a sort of multimedia authoring/display system, while still retaining its simplicity both for the user, and for the person creating the *Clicker Plus* files (or grids as they are more correctly described). Grids can be constructed to include graphics and sound samples as well as computer-generated speech, which is about the best I've heard, although still a little robotic.

Click actions include sending text to the current caret and loading another *Clicker* file. This facility enables substantial multimedia presentations to be created. Talking books can also be created very easily, with a little time spent drawing some pictures and recording some speech. One interesting feature is *Clicker's* ability to load one grid from another. The trouble is, as all linked grids are usually found in the same directory, the user is presented with a number of grids with little indication (other than careful file naming) of which should be accessed first. If creating such a presentation with *Clicker Plus*, it is better to place all the grids in an application directory (prefixed) and place *!Run* and *!Sprites* files inside, together with all the grids and sound samples associated with the presentation. *!Run* should be set to load the first grid and *!Sprites* should contain a suitable application icon. An example of the structure is included on the cover disc.

At £55 for a five-machine licence, I can't think of a good reason why this isn't in every school and used on a regular basis to help support some of our students who have learning difficulties. But apart from special needs, Modern Languages will find many uses for it, including grids for accessing non-keyboard characters used in German (such as ß Ö ä) and French (such as È é á).

As with previous examples of quality software I review, readers may send me their *Clicker Plus* grids and I will compile a disc of all of them and distribute them to those who contributed (and to Crick Computing for its reference). Please mark discs *Clicker files*. AU



The 'traditional' grid. Clicking on a blue box opens up a new linked grid. Clicking on a beige box prints the word at the carat, clicking on a grey box carries out the action.

Product details

Product: Clicker Plus
Supplier: Crick Computing
Tel: (01604) 713686
Price: £55 for a five-user licence. An upgrade from *Clicker* is £20.

Pros: Very versatile • Easy to use • Ideal for special needs
Cons: Speech software is a little robotic • Some pictures in the manual have not reproduced well

Questions & answers

Using modes consistently between different machines, memory problems on an A310, PD in Australia and connecting a CD-ROM drive.

Q I have recently bought a Risc PC, and have been very impressed with its graphics capabilities (my old A3010 hasn't got a chance any more).

After experimenting with the new features, and completing *Simon the Sorcerer*, I eventually got around to trying out a little programming on my new machine.

I managed to work out how to use the new mode selecting system, aided by my PRMs, but when I ran any programs that I had written for my A3010 – which mostly use mode 13 – the display was squashed vertically. Is this because of the computer or the monitor?

How can I correct the programs so that they display full-screen graphics on both my A3010 and my Risc PC (which has 2Mb VRAM and an AKF60 monitor)? If possible, I would like a method which will work correctly under RISC OS 2 and on any machine with a graphics enhancer, so that my programs can be used as widely as possible.

Also, how do I qualify my programs for distribution as PD or Shareware products, and what are the terms and conditions involved?

Russell Palmer
Stourbridge

A **Mode 13 and many of the older modes do not display full-screen on the Risc PC because their refresh rates and line resolutions are too low for the monitor to display correctly. Instead, the monitor 'fakes' mode 13 by displaying a faster mode and slotting the mode 13 in the middle portion of an otherwise blank screen.**

While it is of course possible to alter the monitor controls so that a reasonably full picture is displayed, this is a very unsatisfactory solution.

The excellent utility *Game On!* from The ARM Club (tel: 0171-624 9918) gets round this problem by designing a new set of 100Hz modes onto which the old 50Hz modes are mapped. This by itself gives full-screen modes that run, well, quickly – *Elite* at 100Hz is frightening – but *Game On!* also gives the option to trap every second VSync, so that games which rely on the screen refresh rate for their timing run at the correct speed.

Several of the writers in the *INFO section of the magazine effectively use this method of ensuring that their programs run on the Risc PC, that is, they use mode 13 regardless. While this is fine for the sort of program featured in *INFO, it would hardly be adequate for commercial software written after the launch of the Risc PC to use this approach.

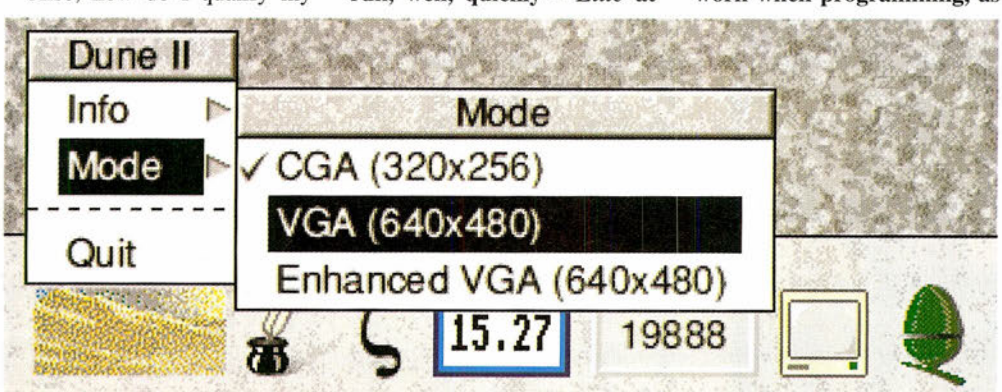
Several games – *Dune II* for instance – give an option to choose the screen mode from an icon bar menu. This can, of course, also be useful for raising the amount of detail available on faster machines. This can also be done automatically from the program, as it detects what operating system it is running on.

This approach needs more work when programming, as different routines will probably be needed by different screen resolutions and sizes. What is ideally needed is a 'standard' mode which will work with most types of monitor. Mode 28 fits the bill quite well, working on multi-sync, VGA and SVGA monitors, but it is also heavily memory- and processor-intensive.

To remedy this, Acorn developed modes 48 and 49, which run on the same types of monitor as mode 28, providing 16 and 256 colours respectively. The modes run at 60Hz with 320x480 pixels, and are similar enough to mode 13 that programs can easily be written to run in mode 13 on older (type 0) monitors and in mode 49 on newer ones. Mode 49 is a full-screen mode on the Risc PC.

The slight drawback with this approach is that modes 48 and 49 are not standard on any version of RISC OS before RISC OS 3.5. They are available as a separate module from Acorn, which therefore must be distributed with your program if it uses them. Contact Acorn – tel (01223) 254254 – about conditions for distributing the module if you are interested. It was on the CD-ROM in the archive *ACORN.FTP.DOCS. APPNOTES.200-215.202C* – needing *Spark* to decode it – so there shouldn't be many problems.

Naturally, if you are writing a program to run in the Desktop, it should not assume that it is running in



***Dune II* allows the user to select the mode that it runs in, depending upon the monitor available.**

any particular mode. It should work in 16 and 256 colour modes, as well as the higher number of colour modes on the Risc PC – the _ColourTrans_ module provides a host of SWIs to help with this, as documented in the PRMs.

Ideally, the program should also work in the high resolution mono mode 23 (not supported on the Risc PC) which is only for use with hi-res mono monitors. This can be a little hard to test, unfortunately, as most monitors cannot actually display mode 23.

As for 'qualifying' programs as PD or Shareware, this is something that you need to do for yourself. The basic situation is that any program you write is your own property and may not be copied or distributed by anyone else without your permission. Permission can be (and often is) given explicitly in the _!Help_ file with the program, or in a separate _Licence_ file.

There is no 'set wording' for this. The rule is to keep it as clear as possible. If the file is freely distributable, but not by someone making a profit, then say so. If you want anyone using the program for over a week to send you £10 registration, then say that as well. The clearer you make your instructions, the more of a leg you will have to stand on if someone claims to have misunderstood.

Q I have an A310, which has been upgraded to 4Mb of memory and RISC OS 3. It also contains a FaxPack and a high-density disc drive interface, as well as a SCSI hard disc.

This has served me well for many years, and I find it entirely satisfactory for writing letters and doing a bit of home accounting. I even design letterheads in *Paint*.

Recently though, I have been having problems. I have noticed that occasionally a picture I am drawing in *Paint* will become corrupted, with odd pixels changing colour for no reason. Worse than that, programs will sometimes crash with an address exception, or an unknown SWI. These are programs which I have never had problems with before.

I haven't added anything new to my system for a while, so what is causing these errors; is it a hardware problem?

Harry Barkworth
Shrewsbury

A The symptoms that you describe sound like a classic memory problem to me. I would suspect a problem with your 4Mb upgrade, although the fault may not lie with the upgrade itself. Depending upon the design of the upgrade, the connector running from the memory to the memory controller may run close to – for instance – the cable for the floppy drive. Have you recently altered the position of any hardware inside your machine, for instance the high-density drive?

Assuming that it _is_ the memory board, then your approach depends upon who supplied the board. If the extra memory was bought recently, then your supplier may be able to fix the fault cheaply and easily. If it was bought a number of years ago the solution may be more expensive, as the upgrade design is probably obsolete.

In any case, a good first step is to press gently but firmly on all the connections on the upgrade, including the ribbon cable connecting the memory to the memory controller. Sometimes these problems are caused by nothing more than a dodgy connection.

If this doesn't cure it, then talking to your local dealer is probably the best option, who will be able to advise you on how to get the machine repaired.

Help wanted

Ben Mearns of Perth, Western Australia writes:

'I would like to know any information about good PD games and how to get them (I do not have Internet access). Is it possible to get PD games in Australia, and if so, how much do they cost?'

Acorn User (and Ben) would be grateful for any information that our Australian readers can provide on this point. AU

SCSI, IDE and other CD-ROM connections

Acorn User's **recent CD-ROM drive offer threw up a number of queries about the different ways in which a CD-ROM drive can be attached to an Acorn computer, so here are some answers.**

Dedicated interfaces

Probably the simplest way to connect a CD-ROM drive is to buy one with a dedicated expansion card. This plugs into one of the podule expansion slots in the computer and provides an interface to the CD-ROM. These cards are CD-ROM-only; they cannot be expanded with further peripherals. They are often cheaper than other solutions.

A similar idea is employed by the parallel port CD-ROM drives. These have an interface which plugs into the printer port on the computer. Since double-speed CD-ROM drives only have a relatively slow data transfer rate anyway, the slowness of the parallel port is not really a problem with these drives. Printers and dongles can be daisy-chained off the end with no problems, although other parallel-port devices may interfere with the operation of the drive.

Unfortunately, this solution is only available to those with bi-directional printer ports: A5000, A4, A3010, A3020, A4000 and Risc PC. In fact, this is pretty well the only way to connect a CD-ROM drive to an A4. These drives are easily portable between machines, including (with suitable driver software) to IBM-compatibles.

SCSI interfaces

SCSI CD-ROMs are increasingly becoming available. These connect into a SCSI chain, which may have up to seven other devices attached: hard drives, scanners and so on. One of the advantages of this is that all the devices can be run off one single expansion card; another is speed, although this is perhaps less important with CD-ROM drives than with, say, a hard drive. The new SCSI II cards are in principle faster than original SCSI I cards, although there are other considerations. Morley's cached SCSI I card tends to out-perform either of the SCSI II cards available at the moment in practice.

What you buy when you go for the SCSI solution is _one_ SCSI card, which you then connect your SCSI devices to. You do not need to buy a further SCSI card each time you buy another SCSI device – up to the maximum of seven devices, of course. You only need to buy the card when you buy the first SCSI device. Only the A540 came with SCSI as standard, it is extra on all other machines. In principle, any SCSI device should be compatible with any card. Things aren't actually that simple in practice, and it is wise to check if a particular device does actually work with the card you have in your machine before buying it.

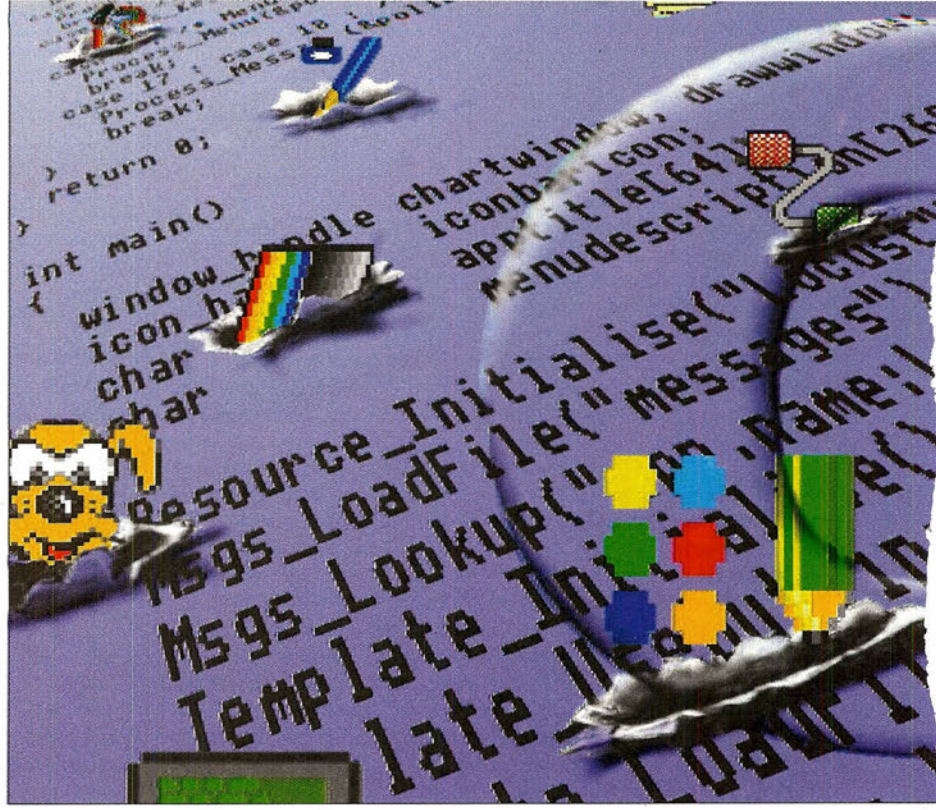
Connecting a CD-ROM drive to a SCSI card is a little bit more complicated than just plugging it in – you also need a driver (a small software module) for it. If it has been bought from an Acorn dealer, the driver will usually have been provided. However, if it has been bought from somewhere else – perhaps for use with a Mac as well – then you will need a separate driver. Eesox (tel: (01223) 264242) and Morley (tel: 0191-257 6355) both do a range of such drivers, and it is worth asking other manufacturers.

IDE interfaces

The Risc PC comes with an IDE internal hard disc. The IDE interface is similar to the SCSI interface, but is a poorer relation as it is usually slower and can only take a maximum of two devices. Nonetheless, this is enough to allow you to connect an internal IDE CD-ROM into the 5.25in bay of your Risc PC – a good solution if you have such a machine. You can't then connect a second hard drive, though. Unfortunately, the IDE standard doesn't allow for long connecting cables, so IDE CD-ROM drives cannot easily be used in pre-Risc PC machines.

C your

This month Steve Mumford investigates some alternative methods of data storage.



JACK KREINDLER

Up till now, if we've wanted to store a set of related data items such as names or telephone numbers, we've used arrays – David described how to set them up back in the December 1994 issue. As a brief reminder, here's a few examples of array declarations:

```
float numbers[10];
int grid[5][10];
char names[10][25];
char *places[20];
```

It's important to remember that when you declare your arrays, you're specifying the maximum number of elements you'll be using – in the first example, you've defined ten 'cells' starting at numbers[0] and going to numbers[9].

Arrays are quite versatile, but they do have their limitations. If you're writing a simple database to store the contents of your address book, you'd need several arrays to hold the different types of information – one for the names, another for the telephone numbers, and so on. In order to perform an operation on an individual record, you have to examine each array in turn and manually reconstitute the information. It's simple enough to do, but when each record contains a lot of data fields, it quickly becomes tiresome, especially for routine operations like copying one record into another.

Another consequence of arranging the data in separate arrays according to its type is that the natural structure of information is lost – in an address book, all the information for one address is stored in one space; you'd never dream of storing all the phone numbers in a separate chapter and cross-referencing them to the names whenever you wanted to call someone. It's this philosophy that brought about a major addition to the language of C, and it's this addition that I'll be looking at next.

Structures

A structure can be thought of as a group of variables, similar to an entry in an address book. Once you've defined the contents of a structure, you can declare a structure of that type with a single command. Here's how you define a structure:

```
struct mode {
char name[15];
int xres;
int yres;
int colours;
};
```

Essentially, you put together a list of the items you want the structure to hold, and initialise them as if they were separate variables – the only difference is that you surround the whole lot in braces at the end of a struct command – and since it's a command we're dealing with we need to include the semicolon after the closing brace. The example above assigns the name mode as a new variable type. No structures have been created in memory yet; we've just told the compiler how to make one when it needs to. The structure mode contains four elements – a block of 15 bytes in which a name can be stored, the x and y resolutions of the mode, and finally the number of colours. In order to declare a structure of this type that we can use, we need to do the following:

```
struct mode games;
```

or

```
struct mode hires;
```

It's similar to declaring a variable of any other type, but because mode is a type we've just created – a pseudotype, if you like – we need to remind the compiler of that fact by prefixing it with the struct keyword.

If you're going to be declaring several structures with the same definition, it's common practice to use the typedef command to cut down on the typing. The following example instructs the compiler to treat any MODE instruction it finds as if it were struct mode.

```
typedef struct mode MODE;
MODE games;
```

You can even use the typedef command at the same time as the definition of the structure, which accounts for why you'll see some pretty big differences between structure definitions.

```
typedef struct {
int numerator;
int denominator;
} FRACTION;
FRACTION frac1;
```

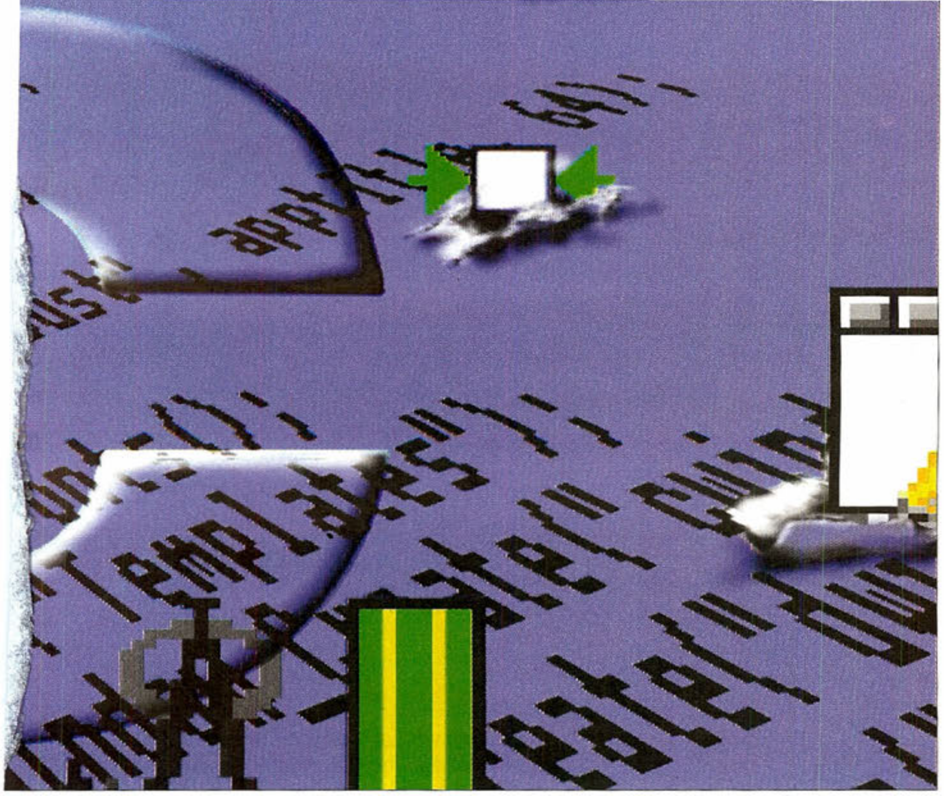
So, you've defined and declared your structure, so how do you use it? In the same way that you use an index to look at different elements in an array, you use the names of the members of the structure to access them, by using the dot operator.

```
gets(games.name);
games.xres = 640;
games.yres = 256;
games.colours = 256;
```

In the example above, I'm storing information in the structure named games by adding the appropriate element onto the end of the structure name.

Arrays of structures

It's all very well being able to create a compound variable that can take a whole chunk of related data in one go, but it's not much use



for self

unless you can create whole stacks of them in one go. However, since we can do almost anything with a structure that we could do with a variable, there's no problem – we just create an array of structures.

```
MODE modes[10];
```

The above statement declares an array of ten mode structures, and each can contain a name, the x and y resolutions, and the number of colours as before.

A structure in an array is accessed in almost the same way as before, using the dot operator. The following example steps through the array of structures and reads in a name for each of them.

```
for (x = 0; x < 10; x++0) {
printf("Please enter the name for mode
%d:\n", x);
gets(modes[x].name);
}
```

This allows us to store our list of names and addresses in one large array, and operations such as copying, sorting or deleting records are made much easier by the fact that we can access a whole chunk of data in one go. The code fragment below creates a new structure named chosen and copies the fourth structure from the modes array into it.

```
MODE chosen;
chosen = modes[3];
```

Note that this copies the array of characters in modes[3].name, which would have needed the strcpy() function outside a structure.

Advanced structures

So far, we've created individual structures, made arrays of them, and learned how to access the separate elements within them. However, that's only the tip of the proverbial iceberg – since you can do almost anything to a structure that you can with a variable, you can manufacture some pretty interesting data maps.

Firstly, you're not limited to including single variables in structures; you can put arrays within them too. If you want to progress further, you can also include other structures, arrays of structures – the list goes on. There are limitations; if you're defining a structure named address, you're not allowed to refer to structures of that type within its own definition. It's mostly because you fall into a recursion trap – the compiler would try to put the address structure inside itself, and get confused. However, as with most limitations, there's a way round it, and this leads on to such marvels as linked lists and binary trees – more on which next month.

```
struct example {
int array[10][20];
MODE games;
MODE strucarray[5];
};
struct example ex1;
```

Once the rather complex structure shown above has been set up, you can access all the elements within it following the rules laid out earlier. All the following assignments are possible.

```
ex1.array[5][5] = 10;
ex1.games.xres = 640;
ex1.strucarray[3].colours = 16;
```

Pointers to structures

Another important similarity between structures and other variables is the ability to refer to them by their location in memory – by a pointer. This allows structures to be allocated memory dynamically, which is a neater, although more complicated, arrangement than declaring a huge array of them at the start of the program. Taking the example of the address book database, we could either guess at the maximum number of records the user would ever create and set aside enough memory before the program ran, or using pointers, we could wait until the user needed another empty record before allocating the memory. The only snag is that we have to use malloc(), so if you need to brush up on the function, I suggest you browse over David's article in the Christmas 1994 issue of *Acorn User*.

```
typedef struct {
int x;
float y;
} SIMPLE;
SIMPLE *var1;
```

The above fragment defines a structure and creates the variable type SIMPLE for it. The last line declares a pointer to a structure of type SIMPLE, but doesn't allocate any memory yet. That's done by using the malloc() function, and the sizeof() function calculates the amount of memory the structure takes up. If it's a more complicated structure, you might have to determine its size for yourself.

```
var1 = malloc(sizeof(SIMPLE));
```

You can't access these structures in quite the same way as the ones mentioned earlier in the column, but a special operator is provided to avoid all those stars and ampersands that are normally associated with pointers. I'll cover that next month, so I'll see you then. AU

Erratum

Gareth Boden's e-mail address last month was printed incorrectly. For information on CHelp, contact gdb20@cam.ac.uk

Absolute beginners

Menus are an important part of using the Archimedes. They are one of the ways of giving instructions to programs. If you want an application to save a file, you will usually be able to do it by choosing the 'Save' option from a menu, even if there are other ways such as combination of key presses. In fact, the key presses to achieve the same action are often shown on the menu, alongside the action.

Navigating the menu structure

Menus are opened in the same way in all applications – by clicking with the middle 'Menu' mouse button. The button is clicked once to display the menu, and the menu displayed is appropriate to whatever was underneath the pointer at the time. Usually, this will be a window belonging to an application, and the menu will be created by the application. There are some areas of the Desktop that do not generate menus, of course, such as an empty area of the icon bar and the borders of windows.

In its simplest form, a menu is a list of actions which the program can perform. For instance, clicking with Menu over the floppy disc icon on the icon bar opens a menu with a list of actions which may be performed on the disc. Some of these – verifying the disc, finding out how much free space is on it, and so on – are a single action and require no further input from the user. As the pointer is moved up and down the menu, the action to be performed is highlighted. Clicking with any of the mouse buttons performs the action, though Adjust has the added property that the menu remains on screen – otherwise (with Menu and Select) it is removed.

Formatting the disc does require some further input from the user as the Filer needs to be told what format the disc should be made. The arrow to the right of the word 'Format' indicates that this menu contains a *submenu* which will be opened when the pointer is moved over the arrow. In RISC OS 3 you can also configure submenus to open automatically if the pointer is left over an entry containing a submenu for a short period of time. The menu structure including its submenus is often called a *menu tree*, as it contains ever more submenus branching off the original 'root' menu. In practice, few menu structures go more than three layers deep.

Submenus do not actually need to be menus; they can also be windows. Usually (though this can change) the window is a *dialogue box* – a simple window allowing you to set several options at once in a more convenient manner to continually going through a menu structure.

Menus are not as permanent as windows; a menu will disappear if the mouse is clicked with the pointer outside the menu structure, it will usually be removed when a choice has been made, and only one menu structure (menus and submenus) may be on screen at once. A submenu will also be removed if the pointer is moved back up the menu tree to an earlier menu.

Like windows, menus can be dragged around the screen by using their title bars, though if you accidentally click just away from the title bar, you will lose the menu. There is no need when moving a menu to keep it over the original window it was opened on; in fact, with large menu structures it can be helpful to move the root menu up to the top left of the screen to have room to open all the submenus.

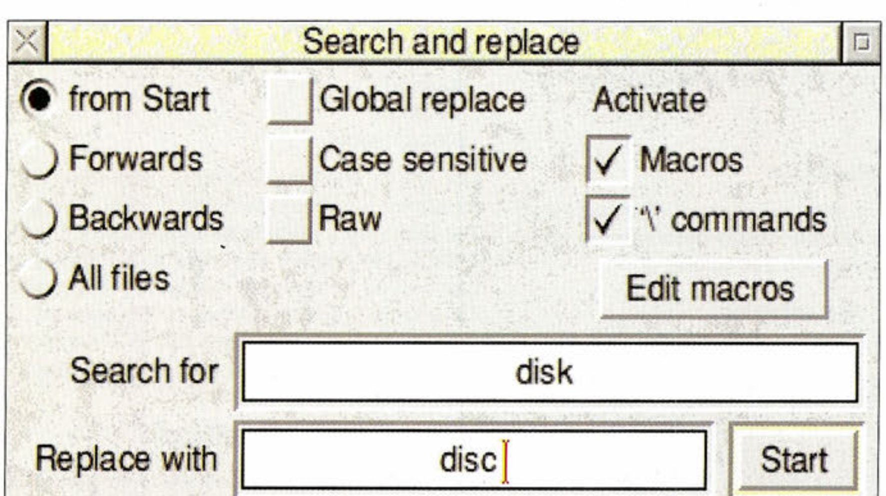
Flags for menu entries

Apart from actions, menu entries may contain settings. For instance, a font menu will not only let you pick the font in which to display your text, but will show the current setting. It does this by adding a tick symbol to the left of the menu entry if the option is currently selected. Clicking on the menu entry toggles the state of the entry between ticked and unticked – if you use Adjust and so keep the menu on screen, you can see this happening.

A menu entry with an ellipsis (...) following it will, if clicked upon, open a more permanent dialogue box, closing the menu in the process. This dialogue box is a separate window, not part of the menu structure, and will usually remain until the user explicitly removes it.

Some actions which you can perform using a menu may depend upon the status of other settings within a program. For instance, you can only undo an action if you have first done something to undo. If these options were only to appear on menus when they were needed, it could be confusing, with menus constantly changing their layout and contents. Instead, these items are often present but are greyed out and unselectable. Buttons in dialogue boxes can be greyed out in a similar way.

Many menus have dashed dividing lines separating groups of items; this is purely cosmetic and has no deeper significance.



A standard dialogue box, with option icons and two icons where text may be entered. No changes will actually be made until the 'Start' button is clicked upon. Clicking on the Close icon for the window will close the dialogue box without making any changes – there may also be a 'Cancel' button to do this.

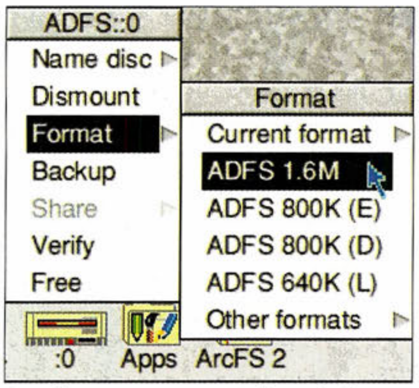
ABSOLUTE BEGINNERS

Learn to make choices with the menu part of the WIMP and with appropriate key presses in our ongoing series for beginners by David Matthewman.

Key short-cuts

Menu entries are often followed by a *keyboard short-cut* – a combination of keys which will make the program perform the same action that would be done by clicking on the menu entry. Once these are learned, they offer a quick and easy way to do common and simple actions without having to move your hands from the keyboard.

Such-short cuts often involve the Ctrl key, sometimes in combination with Shift. The function keys along the top of the keyboard (labelled F1 to F12) are also used extensively. For instance, Ctrl-Shift-I (Hold down both the Ctrl and Shift keys and type I) is used to insert a frame in *Impression*, while Ctrl-S snaps an object to the grid in *Draw*. The function keys are often used without Shift and Ctrl, and many have standardised uses across many applications. F3 is used to save a file in 99 out of 100 editors, and F1 often starts interactive help.



A small menu tree, generated from the floppy disc icon on the icon bar, and showing one submenu.

If recognised, the key short-cut will be processed by the window with the caret (identified because the title bar will be pale brown rather than grey), but if this does not recognise the short-cut it will pass it on. This can occasionally have unexpected effects, but normally works well. For instance F12, Shift-F12, Ctrl-F12 and Shift-Ctrl-F12 are used by the Desktop, so well-behaved applications do not respond to these key-presses but pass them on instead.

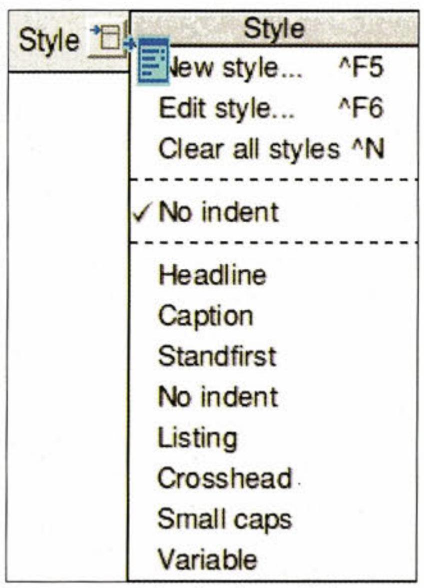
Key short cuts are represented on menus using the ^ (Ctrl) and ↑ (Shift) symbols. Note that on Risc PC keyboards, some of the keys are labelled differently from on older machines; most glaringly, 'Copy' is now 'End.' Not all short cuts available need be listed on the menu, though there is usually a full list in the manual for the program. On the other hand, not every menu entry has a keyboard short cut – Filer menus for instance have none – it all depends on the programmer.

As an aside, mouse clicks can also be modified with Shift, Ctrl and Alt keys, though this feature is much less used on the Archimedes than it is on one-button-mouse systems like the Mac.

Pop-up menus

There is a certain class of menu which is a little bit different, in that these menus – called *pop-up menus* – can be opened by clicking on a particular icon with any of the three mouse buttons. They tend to be a simple list of alternatives, one of which will be chosen – a particular font, colour, resolution and so on. In all other respects, they behave exactly as menus do.

In order to warn you that a pop up menu is available, the pointer helpfully changes shape into a tiny pop-up menu symbol. There is a 'standard' pop-up menu icon, but such menus may legitimately be produced from other icons which often give a clearer idea of the menu's function. There are several such menus on *Impression's* button bar, for example. AU



A pop-up menu, showing the standard pop-up menu icon, the changed pointer and the menu itself.

Jargon

Dialogue box: a particular style of window usually containing a number of choices, plus icons to either make the changes or close the box without changing anything. Using Adjust will leave the box on screen, as with menus.

Keyboard short cuts: a combination of key presses which will perform some action, usually one which would otherwise need you to remove your hands from the keyboard and use the mouse.

Menu Tree: also known as the menu structure – a menu and all its submenus and dialogue boxes.

Pop-up menus: menus – usually containing a simple list of choices – which are opened by clicking on a particular icon, rather than by clicking specifically with the Menu button.

Submenu: a menu which is obtained by moving the pointer over an arrow in another 'parent' menu rather than by clicking with Menu. The title of the submenu is usually the option in the parent menu which generated the submenu.



Run the RISC

Mike Cook continues his hardware series by wiring up his old racing car set to his Acorn.

Now, how many of you have a slot-car racing set that is gathering dust under the bed in a large box? Well, I thought this month I would revive my son Graham's racing car set by attaching it to the computer.

There are many things we can do with a computer and a slot racing set, so many in fact that some of them will have to wait for another time. What I thought I would tackle now is lap timing, as this seems to offer the maximum increase in play value. Racing against the clock gives added interest, especially when you can't find an opponent. You can have lap records for each track layout and can easily assess the results of fine tuning of the cars.

Starting out

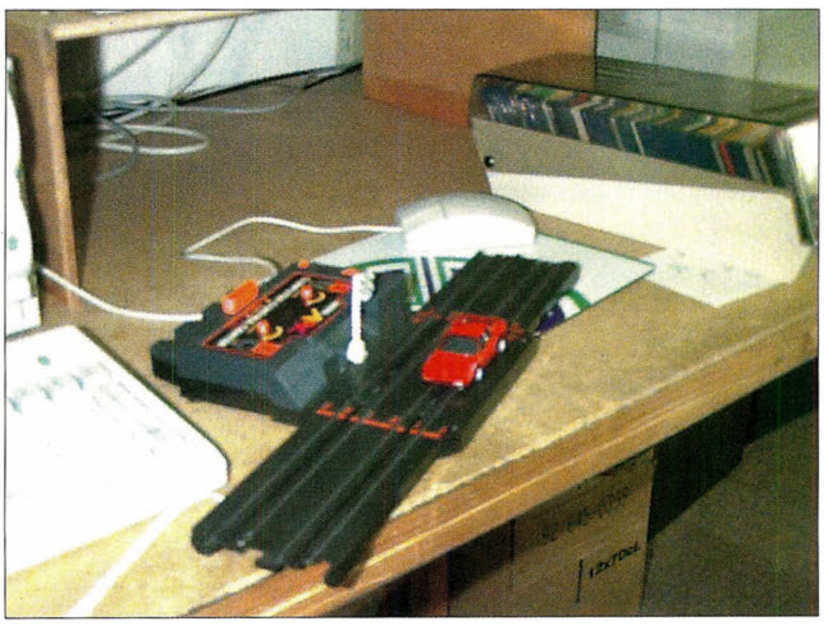
When tackling any project like this, the first thing you have to do is decide on your sensor. What we need is something that will give an electrical signal to the computer when a model car passes it. One initial thought was an infrared beam broken by the car, but this would be tricky to implement. It wouldn't be so bad for an individual car as you could mount the emitter and sensor on either side of the track, but when you have two or more lanes you would need to mount one of them in the middle of the track between two cars. This would involve drilling holes in the track and some precise mechanical construction, as there is not a lot of clearance. One possibility would be to mount a reflective optical switch on top of a gantry the cars travelled under, but it would be difficult to detect anything but white cars.

Now, the race set that Graham has is a 'Tomy' and the cars have magnets built-in to keep them attached to the track. Other makes of car also have magnets in their motors so I thought the detection of the magnetic field from the car would make a good way to sense them. Fortunately, you can get Hall effect switches quite cheaply, so I used them here

The Hall effect is quite an important physical phenomenon. What happens is that you take a block of semiconductor material, such as silicon or germanium, and pass a current along its length. If you place this in a magnetic field you will find a voltage appearing across the sides of the block as shown in Figure 1. For a given material, the direction of this Hall voltage corresponds to the direction of the magnetic field, and the size of the voltage is directly proportional to the size of the magnetic field.

The discovery of this effect was most important in our understanding of electronic materials as it went against the then-established theories of electrical conduction. You see, the current of electricity can be considered to be a flow of electrons, which will be deflected by a magnetic field just like they are in a TV tube. However, in some materials a positive Hall voltage was observed, which meant that in some materials, conduction was performed by the flow of positive charge carriers and not the negatively charged electrons.

In fact, it turns out that in these materials, conduction is by a flow of holes, a hole simply being where an electron isn't. If an electron carries a negative charge then a hole will carry a positive charge. It might seem strange at first to think of the movement of a hole, but consider a



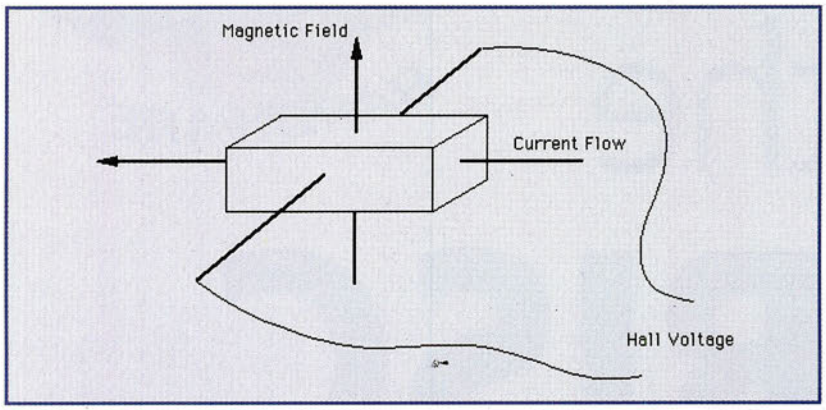


Figure 1: The Hall Effect.

glass of fizzy pop. You think of the bubbles travelling upwards, but what is really happening is that the liquid is flowing round the hole to make it appear in another place; it's just simpler to consider the bubble as an entity and plot its path. In solid state physics holes are like that – it is really the electrons that are moving but it is more convenient to consider the hole. How a hole comes to actually possess mass I will leave to the second year of a Physics degree.

Proximity switches

We can use this effect to make extremely sensitive proximity switches, which means we can detect the presence of a magnet over a much greater range or use very much smaller or weaker magnets. While the actual size of the Hall voltage is very small, it is possible to build devices which include an amplifier and threshold circuit, along with the Hall sensor, to produce a complete switch. These switches are extremely easy to use and can be incorporated in a variety of applications.

The switch I chose for this project is the OHN3040U, which is the most sensitive in the catalogue and can be switched by fields of 150 gauss. Simply by adding a single pull-up resistor to this you can get an output the computer can read. The idea is to mount the switch underneath the track so that it will be triggered by the passing car. With the track I had, there were regular small gaps in the plastic exposing the metal conducting rail – these were just the right size to fit the sensor into, secured by a small dab of hot melt glue: see Figure 2. Before permanently fixing them, make sure they will detect your car; if you have difficulty you might have to move the sensor closer to the magnetic field in your car. This is because the strength of a magnetic field drops off very rapidly with distance; in fact the field is inversely proportional to the cube of the distance. The side of the sensor with the writing on is the most sensitive one, and this might even have to be let into the track so that it is closer to the motor.

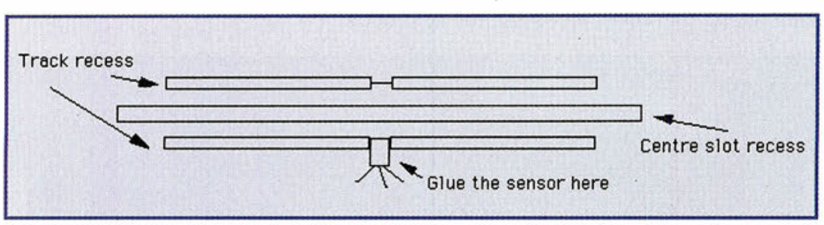


Figure 2: The underside of the slot racer track.

Luckily with my set-up I had no such problems and my tests showed I could reliably detect the passage of a car. However, the cars do travel at quite some speed and the amount of time spent under the sensor is quite short. I measured pulses of about 5mS when the cars were going at full speed. This is a problem for the computer as it has to be looking at the sensor at the precise time the car passes by in order to see it.

The solution seemed obvious: feed the pulse into a flip flop and let the computer read the flip flop. In that way the passage of the car would be recorded until the computer got round to reading it. Then you could use an output to reset the flip flop for the next lap. So I built a circuit and it tested out fine. Unfortunately, it was one of those cases where the operation was a success but the patient died.

Yes, the system worked well at detecting and storing short pulses, but when the cars were actually running they created so much interference that the flip flops went haywire. This was despite the fact that there was no direct electrical connection between the car motor supply and my sensors. The problem was one of electromagnetic radiated interference and no matter what I tried I could not shift it. The digital ICs did not have enough noise immunity so therefore I had to try a different tack.

Stretching pulses

If you can't latch the pulses then the next best thing is to stretch the pulses so that they are long enough to guarantee your computer will be able to see them, and this is basically what happens

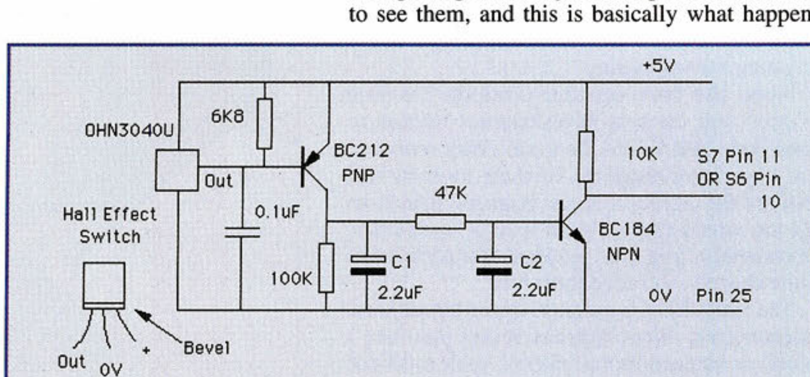


Figure 3 The sensor circuit: make one for each track.

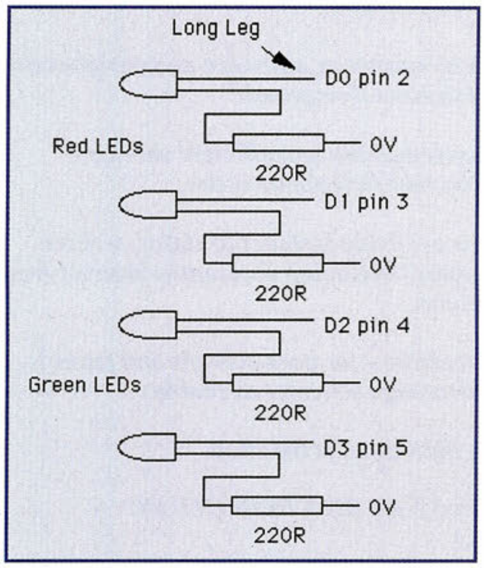


Figure 4: Starting Lights Wiring

in Figure 3. The output from the sensor is normally high and drops low when it detects a magnetic field. The idea is to use the short time it drops low to rapidly charge a capacitor and when it is high to slowly discharge the capacitor, which then stretches the pulse. A circuit that does this is known as a monostable and, although you can get IC monostables, with my earlier problems with interference I decided to steer clear of them and build ones out of transistors.

If you look at the diagram you will see that as the sensor's output drops low the first transistor is turned on – you can only do this with a PNP transistor, sometimes called an 'upside down' transistor. When this turns on it connects the capacitor C to the positive rail and rapidly charges it up. As the car passes and the sensor's output goes high, the transistor turns off and the capacitor starts to discharge through the 100K collector load. However, there is also another discharge path through a resistor into the base of a second transistor to ensure the transistor is switched on while the capacitor is discharging. We can then feed the output of this transistor into the computer and it will be long enough to detect. The capacitor on its base is there to suppress any interference that is picked up. I used tantalum capacitors in this circuit as they are better at dealing with interference than metal foil capacitors.

You will need one of these circuits for each car you want to detect. You can test it by using the port monitor application and simply placing the cars on the track. To add a bit more interest I decided to use some of the computer's outputs to light some LEDs to act as a starting gate. The electrical arrangement is shown in Figure 4 and has simply the outputs driving the LEDs directly, and as these outputs are meant to drive a printer there is just enough power to do this. I mounted them on a gantry I made from cutting out a small cardboard box and simply placed them over the box. As far as I can gather, in a real race the two red lights go on five seconds before the race and the race is started by the red lights going off and the two lower green lights going on. However, as these are under software control you can do whatever you like in terms of making them flash.

The software interface

With the hardware in the bag we need to write the software. I have written two examples on this month's disc, one for a solo car and the other for two cars. Both programs are quite similar and are designed so that you can expand and embellish them to suit your own needs.

The solo car program assumes the sensor is connected to bit 7 of the control inputs, which, you will remember from earlier articles, is an inverting input. The first job the program does is to wait until the car is over the sensor. It then proceeds with a ten second countdown, turning the red lights on at five seconds. It then looks at the sensor again and if the car is not over it the program signals a false start. With the car in place the green lights go on and the computer beeps and then enters a loop to time ten laps. The loop consists of two parts, the first holds until the car has left the sensor and the second holds until the car is over the sensor. The time taken to pass through these two loops is printed out as the lap time.

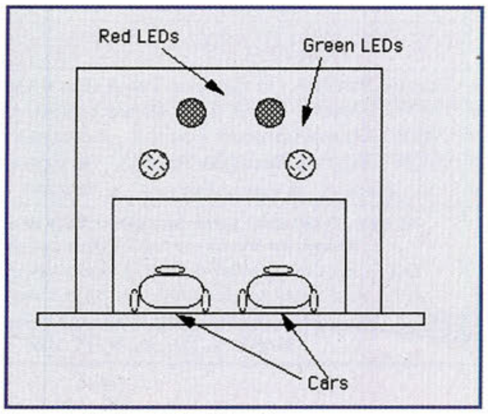


Figure 5: Starting lights Mounting.

With two cars the program is a bit more complicated – here we can't afford to wait in a loop so we need to monitor both cars at the same time. The way I do this is to have a variable for each car, which contains either zero or one depending on the state of the last reading of the sensor. Now, if the current reading is not the same as the last reading and the current reading is zero, then the car has just passed over the sensor, so we can work out the time that car has taken to lap.

At the same time we also increment the lap counter for the car and halt the race when either car has reached its tenth lap. The car with the biggest lap count is the winner. There is a slight complication as the second car is read in on bit 6 of the control bits which is a non-inverting input. So that it is treated the same as the first car it is inverted by using the EOR – that's exclusive OR operation.

If you were to need more than two cars then it would be best to rewrite the program using arrays rather than individual variables for each car.

As I said at the start, this is only the basics of what you can do with a computer and a car race game. I strongly encourage you to experiment and add to it. For example, you might want to add sound effects or even devise a rally game where you get penalty points both for going too slow and too fast. You could also control an opponent's car using a computer, but you might like me to give you a hand with that one: see you next month. AU

Acorn Customer hotline

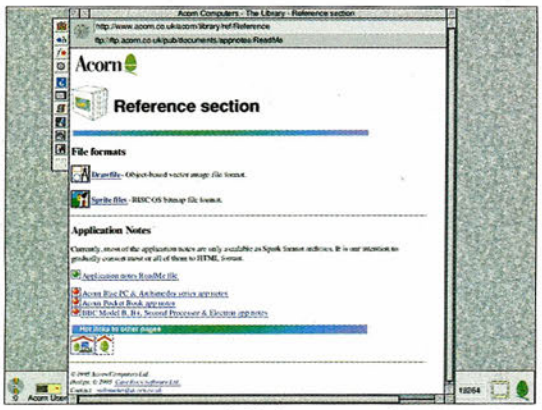
Essential information for all Acorn users, compiled by Dave Walker of Acorn Customer Services exclusively for Acorn User.

Multiple Connections to LK14

The Risc PC is fitted with two auxiliary audio connectors; these are LK13 and LK14, located in the rear right-hand quadrant of the motherboard (close to the power supply) when viewing the machine from the front. The purpose of LK14 is to enable sound to be output from a CD-ROM drive with audio mixer board, or the 16-bit sound card, or some other audio device to play its output through the internal speaker.

If you have more than one device which requires access to LK14 (for example, if you have a Risc PC fitted with Cumana CD300iA and Acorn 16-bit sound card), you would in theory have to leave one device disconnected because LK14 can only take one header plug. However, Cumana has now produced a small passive splitter which allows up to four audio devices to be connected to LK14. The splitter comprises a small PCB which sits on top of LK14, and is available from: Cumana Ltd, Pines Trading Estate, Broad Street, Guildford, Surrey GU3 3BH, tel: (01483) 503121.

Some motherboards have LK14 comprising 5 pins, whereas others have 4; the 'extra' pin, which is the rearmost on a 5-pin connector, is another earth connection.



Application notes are available from Acorn's ftp site or via its brand new WWW pages.

DOS resolutions

When running certain DOS applications under the Risc PC 486 card you may find that the card switches, without your intervention, from single to multi-tasking mode; the PC display will switch to a RISC OS window. This happens when the DOS application attempts to select a screen mode which is not defined under RISC OS. To prevent this from happening, you will need to create a RISC OS screen mode with the same X and Y resolution as that which is being selected by the DOS application. The first step in creating a suitable screen mode is to discover the correct resolution needed. This can be done by following the steps below.

• When the PC display switches into a RISC OS window, save the PC screen as a sprite.

• Drag the saved sprite into the *Paint* application. A window will open containing a single sprite, *pc_screen*.

• From the main *Paint* menu, select the option 'Display->Full info'. The display will now show the size of the sprite in the form of 'xxx by yyy'. This is the X and Y resolution for the required PC screen.

Armed with this information, you should now be able to create a suitable RISC OS screen mode using the *MakeModes* application, which is available through a variety of sources including Acorn's ftp site, various Acorn-related bulletin boards and of course, Acorn Dealers.

Yet more data on ftp.acorn...

The Acorn ftp site ftp.acorn.co.uk has recently had yet more data uploaded to it. The directory */pub/documents /ARM* contains copies of a selection of ARM chipset datasheets by kind permission of ARM Ltd, and */pub/documents/circuits* contains a small (soon to expand) collection of digitised circuit diagrams for older Acorn hardware. The circuit diagrams are currently available as compressed sprite format, and as GIFs; the files are rather large so they can preserve sufficient detail that they may be accurately vectorised using an automatic outliner at some later date. If any intrepid readers with ftp access would like to convert these diagrams into something vector-oriented, contact the maintainer of the circuits area (in */pub/documents /circuits/ReadMe*) for details.

In addition, a set of updates to some of the tools which comprise part of the C/C++ package has been released; this upgrade is now available in */pub/riscos/releases/Cupdate1.arc*. This update should only be used in conjunction with Acorn C/C++ and is covered by the same licence conditions.

For those who do not have ftp access, a floppy disc will be made available for an administration charge of £5 through Acorn Direct at: Acorn Direct, 13 Denington Road, Wellingborough, Northants NN8 2RL.

Also available via ftp are two application notes (including example code) explaining how to write your own *Toolbox* Object and Gadget modules. These are Application Notes 280 and 281, and are to be found in */pub/documents/appnotes/276-290/280.ps* and *ftp.acorn.co.uk:/pub/documents/appnotes/276-290/280.arc* (replace 280 with 281 for the other Application Note) where files with a .ps extension are PostScript files and files with a .arc extension are archived plain text files.

A version of *SparkPlug* is available for dearchiving the .arc files in: */pub/riscos/releases/dearchive.bas.* AU

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RiscPC Computer Systems

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- Illustrated Sherlock Holmes
- Illustrated Works of Shakespeare
- Kingfisher Children's Micropedia
- Pro Artisan v2 CD



Canon IX-4015 Colour Flatbed Scanner



The IX-4015 is a compact A4 flatbed scanner offering full 24-bit colour scanning up to a maximum resolution of 400 x 800 dpi. The scanner can also be used in 256 grey scale mode, up to 400 x 1200 dpi. The scanner comes complete with 16-bit SCSI interface, cables, and Twain drivers.

Offer Price (when purchased with DTP system) **£599**

Acorn 32-bit RISC Computer Systems



The entry level range of 32-bit RISC based computer systems, ideal for home, education or small business applications.
The A3010 is aimed at home use, with its built-in TV modulator, it will connect to a standard colour TV.
The A3020 is the standard education model, ideal as a network workstation or for stand-alone use with built-in hard drive.
The A4000 is designed for home and small business use, coming with a 210Mb hard drive and choice of monitor.
The A4 Notebook is for those who need a RISC OS machine on the move. Supplied with 4Mb RAM, hard disk and mouse.

*FREE CD-ROM Drive offer available until end June 1995

System	No Monitor	AKF52	AKF50
A3010 1M Action Pack	£229	–	–
A3010 2M Learning Curve	£299	£499	£569
A3010 2M Early Years	£299	£499	£569
A3020 2M FD	–	£589	£629
A3020 2M HD80	–	£729	£769
A4000 2M HD210	–	£819	£899
A4000 2M Learning Curve	–	£869	£939
A4000 2M Early Years	–	£869	£939
A4000 2M Home Office	–	£909	£979
A4 4M HD Notebook	£1269	–	–

CD-ROM & Multimedia

Cumana CD-ROM Drives

All Cumana CD-ROM drives are supplied with all connecting cables, driver software and interfaces where necessary.



Oscar CD-ROM Drive

A low cost drive which connects to the parallel port of an A3010,A3020,A4000 or A5000.

- Oscar CD-ROM Drive - Parallel Port £199

Bravo CD-ROM Drive

A range of low cost high performance drives which have a built-in audio mixer.

- Bravo CD-ROM Drive - Parallel Port £249
- Bravo CD-ROM Drive - A300/A400/A5000 £249
- Bravo CD-ROM Drive - A3000/A4000 £249
- Bravo CD-ROM Drive - EMU £249

Victor CD-ROM Drive

A SCSI based CD-ROM drive system fot those who require improved performance over the SLCD type.

- Victor CXX402A CD-ROM Drive - SCSI £289

Indigo CD-ROM Drive

A range of internal fitting CD-ROM drives for use with the RiscPC computer system.

- CAA300i CD-ROM Drive - IDE £189
- CAA300iA CD-ROM Drive - IDE £219
- CAA401 CD-ROM Drive - SCSI £189

Speakers & Accessories



- Aries Stereo Speakers £6
- Aries Hi-Fi Stereo Speakers - 10W £19
- Aries Hi-Fi Pro Stereo Speakers - 25W £28
- Aries Digital Stereo Speakers - 25W £39
- Aries Digital Plus Stereo Speakers - 70W £48
- Aries Microphone £4.50
- Aries Stereo Headphones £4.50

CD-ROM Software

Some titles require additional software to run under RISC OS.
These are marked as follows:
EB - Electronic Books : PaperOut software required
PD - PDSView software required

- PDSView £99
- PaperOut - Electronic Book player £49

Art, Graphics & Design
- Artworks v1.5 £129
- Artworks Clipart CD v1 £19
- Artworks Clipart CD v2 £19
- Art in the National Curriculum £75
- Pro Artisan v2 £136

English & Literature
- Goldilocks £39
- Granny's Garden £30
- Illustrated Works of Shakespeare £23
- Karaoke Macbeth £49
- Karaoke Midsummer Night's Dream £49
- Living Poetry £49
- Listen & Read (EB) £39
- Oxford Reading Tree Talking Stories £39
- Sherlock Holmes £23
- Sherston Naughty Stories £79

Geography, Nature & Environment
- British Birds £150
- Creepy Crawlies £49
- Counties of Great Britain £39
- Countries of the World £39
- Dictionary of the Living World £89
- Earth Guide (EB) £39
- Environment: Land & Air £97
- Environment: Water £97
- Environment: Climate Change £34
- Environment: Dwindling Resources £34
- Environment: Conservation £34
- Garden Wildlife £39
- Langdale Primary £99
- Map Skills £49
- Seahore Life £39
- The Physical World £97
- Usborne Exploring Nature £125
- The World's Weather £47

History
- Castles £39
- Changing Times £125
- Frontier 2000 £109
- Industrial Revolution £105
- Medieval Realms £145
- Photobase: Victorians £49
- Picturebase: Victorian Britain £99
- World War II: Global Conflict £97
- World War II: Sources & Analysis £97
- World of the Vikings £39

Languages
- Directions 2000: French £137
- En Marcha: Spanish £137

Mathematics
- Cars - Maths in Motion £49
- Number Games £79
- Perspectives £79
- Picture Gallery £79
- Who Stole the Decimal Point? £79

Science & Technology
- Chemistry Set £149
- Science & Technology Library (EB) £39
- Collins Electronic Food File (EB) £29
- Science: Elements £97
- Science: Materials £97
- Inventors & Inventions £147
- Photobase: Science £49
- Understanding the Body £39
- Understanding Energy £47

Space & Astronomy
- Space Encyclopaedia £34
- Space Science Sampler (PD) £40
- Voyager Spacecraft (PD) £200

Educational Resources
- Acorn Video Collection Disc 1 £10
- Bitfolio 6 - clipart images £49
- Horizon Report £19
- Photobase: 1920's £49
- Photobase: 1930's £49
- Photobase: 1940's £49
- Photobase: 1950's £49
- Photobase: 1960's £49
- Photobase: Landscapes £49
- Sermec Treasure Chest £69
- SSERC Graphics Collection £99

Dictionaries & Encyclopaedia
- 19th Century Biographies £25
- CIA World Fact Book (EB) £29
- Oxford English Dictionary (EB) £29
- Hutchinson Gallup Info (EB) £29
- Hutchinson Guide to the World (EB) £29
- Hutchinson Encyclopaedia £49
- Kingfisher Children's Micropedia £88
- Times & Sunday Times £178
- Times & Sunday Times Sampler £50
- Tekkie CD - Acorn PRM's on CD £99

Pocketbook



The truly portable computer. With built-in word processor, spreadsheet, database, spelling checker and calculator, it provides all the basic tools for recording ideas, notes & data.

- **Pocket Book II 256K Computer £219**
- **Pocket Book II 512K Computer £269**

Pocket Book Accessories
- A-Link £40
- Parallel Link £25
- MAC Link £65
- PC Serial Link £59
- Leather Case £21
- Schedule £16
- Schedule Class Pk £160
- Plotter £25
- Plotter Class Pack £250
- 128K RAM Disk £49
- 256K Flash Disk £59
- 512K Flash Disk £85
- OPL Editor £59
- Mains Adaptor £12

Aries Fax Modems



from £89

Enter the realm of high speed communications with the new Aries XLink range of fax modems. Two versions are available - standard 14400bps V32bis or high speed 28800bps V34 model. Error correction and data compression are standard on all models, so faxing and data transmission overseas will not cost the earth.

When used with ArcFax software, you can send a fax directly from your RISC OS desktop, as easily as printing a document.

- 14400bps V32bis or 28800bps* V34 data transmission speed
- V32, V32bis, V22, V22bis and V21
- Error correction to MNP2-5 and V42 standards
- Data compression to MNP5 and V42 standards
- Call back security
- Synchronous & Asynchronous operation
- Group 3, Class I & II Fax at up to 14400bps (V17)
- Group 1 and 2 Fax compatible (V27ter and V29)
- 100% Hayes compatible
- 3 year manufacturers warranty
- BABT approved

- **Aries XLink XL144e Fax Modem £89**
- **Aries XLink XL144e Fax Modem & ArcFax software £119**
- **Aries XLink XL288e Fax Modem £185**
- **Aries XLink XL288e Fax Modem & ArcFax software £215**

* note 28800bps speeds only available when used with a RiscPC

Flatbed Scanners

Canon IX-4015 Scanner

Canon



The IX-4015 is a compact A4 flatbed scanner offering full 24-bit colour scanning up to a max resolution of 400 x 800 dpi. The scanner will also scan 256 grey scale images with a max resolution of 400 x 1200 dpi.

- 400 x 800 dpi resolution in colour
- 400 x 1200 dpi resolution in monochrome
- Connection via SCSI interface (not included)
- ImageMaster scanning software
- TWAIN driver software

£569

- Auto Document Feeder - IX-4015 £249

HP ScanJet 3C Scanner

The ScanJet 3C is an A4 flatbed scanner capable of producing full 24-bit colour scans at a maximum resolution of up to 1600 dpi.

- 400 x 400 optical resoluton
- 24-bit colour and grey scale modes
- A4 scanning area (216 x 297mm)
- Connection via SCSI interface
- ImageMaster scanning software
- TWAIN drivers

£699

- **Auto Document Feeder - ScanJet 3C £365**
- **Transparency Adapter - ScanJet 3C £499**

SCSI Interfaces
- 16-bit SCSI Interface (A300/A400) £89
- 32-bit SCSI-2 Interface for RiscPC £159
- SCSI-2 Interface Cable £20

Software
- upgrade to Spacetech Photodesk software £119
- Sleuth OCR software £40

Aries Monitors

EnergyPro 14" LR
- 14" hi-res 0.28mm dot pitch tube
- Low Radiation MPRII standard
- 800 x 600 resolution
- Tilt and swivel base
- Horiz frequency - 29KHz to 70KHz

£159

Alphascan Pro LR
- 14" hi-res 0.28mm dot pitch tube
- Low Radiation MPRII standard
- 1280 x 1024 @60Hz
- 1024 x 768 @72Hz
- Horiz frequency - 29KHz to 70KHz

£199

15" EnergyPro 6000i
- 15" hi-reso 0.28mm dot pitch tube
- Low Radiation MPRII standard
- EPA Energy Star compliant
- 1280 x 1024 @ 60Hz
- Horiz frequency - 29KHz to 70KHz

£239

17" EnergyPro 7560i
- 15" hi-reso 0.28mm dot pitch tube
- Low Radiation MPRII standard
- EPA Energy Star compliant
- 1280 x 1024 @ 60Hz
- Horiz frequency - 29KHz to 70KHz

£419

Hard Drives

A300/A400 IDE Hard Drive Upgrades
Complete with drive, interface, mounting kit, cables and software.

- ADA0580 365Mb 11ms £179
- ADA2030 420Mb 11ms £199
- ADA2210 540Mb 12ms £219

A5000/RiscPC IDE Hard Drive Upgrades
For use as replacement of existing drive.

- ADA0880 365Mb 11ms £119
- ADA2060 420Mb 11ms £149
- ADA2220 540Mb 11ms £399

- 2nd Drive Accessory Kit £10

IDE Interfaces & Accessories
- 8-bit IDE interface for A3000/A3010 £59
- 16-bit IDE Interface for A300/A400 £39
- Dual IDE Interface Cable £9

A3000/A3010 Internal IDE Hard Drives
Complete with drive, interface and software.

- ADA2360 170Mb 13ms £199
- ADA2090 340Mb 11ms £299
- ADA2200 510Mb 11ms £399

A300/A400 SCSI Hard Drive Upgrades
Complete with 16-bit interface, drive, cables and mounting kit.

- ADA2300 365Mb 12ms £249
- ADA2310 540Mb 11ms £299
- ADA2320 1.0Gb 9ms £499
- ADA2330 2.0Gb 10ms £849

SCSI Interfaces & Accessories
- 16-bit SCSI Interface - A300/A400 £89
- 32-bit SCSI II Interface RiscPC £159
- Dual SCSI Interface Cable - ribbon £9
- SCSI Interface Cable - round £15

Networking



Acorn Ethernet Network Interface Cards
- Acorn Ethernet Card - A5000 £149
- Acorn Ethernet Interface - RiscPC £99

Access+ Peer-to-Peer Networking
Simple, easy to use networking system allows you to share hard disks, CD-ROM and printers. Using industry standard Ethernet cabling, you have a flexible system that can grow as your requirements do.
- Access+ for A3000 £129
- Access+ for A3020/A4000 £129
- Access+ for A5000 £129
- Access+ for RiscPC £95
- Access+ CD Share software £95

i-Cubed Ethernet Network Interface Cards
- EtherLAN 102 BNC/TP - A3000 £125
- EtherLAN 200 BNC - A3020/A4000 £135
- EtherLAN 201 TP - A3020/A4000 £135
- EtherLAN502 BNC/TP - A5000 £125
- EtherLAN602 BNC/TP - RiscPC £105

Ethernet Hubs
- Aries EH-8 8port Ethernet Hub £129
- Aries EH-16 16port Ethernet Hub £279
- Aries EH-32 32port Ethernet Hub £459

Ethernet Cabling

Cable Length	Thinnet	UTP
3m	£5	£4
5m	£6	£6
10m	£8	£9
20m	£15	£16

Connectors and Accessories
- BNC 50ohm Terminator £0.95
- BNC T-connector £1.75
- BNC In-line coupler £1.75

Networking Software
- Level 4 Fileserver Release 3 £359
- TCP/IP Protocol Suite - single user £99
- OmniClient £235
- InterTalk £75

Upgrades & Accessories

RISC OS Upgrades
- Software Upgrade - all machines £74
- Carrier Board - A300/A440 machines £21
- Software Upgrade - Bulk 10 Pack £319

Memory Upgrades

Model	2Mb	4Mb	8Mb
A3000	£49	£119	-
A3010	£59	£139	-
A3020/A4000	-	£89	-
A5000	-	£79	£269
A540/R260	-	£249	-

RiscPC Additional RAM Modules
- 2Mb £79
- 4Mb £105
- 8Mb £225
- 16Mb £345
- 32Mb £POA
- 64Mb £POA
- 1Mb VRAM £89
- 2Mb VRAM £159

Graphics/Sound Cards
- Acorn RiscPC 16-bit Sound Card £59
- CC ColourCard Gold - A300/A400 £239
- CC Eagle M2 Multimedia Card £319
- CC Hawk V9 MK2 Digitiser £189
- CC Chroma 500 Genlock Card £419
- CC Chroma 150 PAL Encoder £169
- CC Chroma Genlock Card £209
- CC TV Tuner £89
- CC TV Tuner & Teletext £159
- CC Movie Magic MPEG Card £249
- CC ScanLight Video 256 £199
- CC ScanLight 256 - A3000 Internal £189
- HCCS Vision24 254 line Digitiser £99
- HCCS Vision24 508 line Digitiser £149
- WE Scan256 handscanner - A5000 £115
- WE Scan256 handscanner - A3000 £125
- WE A4 Mono Scaner & Feeder £199
- WE Multiscan VIDC Enhancer £10
- WE SuperVGA VIDC Enhancer £15

Ultimate Expansion
Increase the expansion possibilities of your Acorn computer with the Ultimate Expansion system. In its simplest form it is a standard internal podule with built in user port and also space for a 2.5" IDE hard disk drive. Up to 3 micro podule slots are provided for other uses such as analogue port, video digitiser or even SCSI interface.

- Ultimate Expansion Interface £39
- Ultimate Expansion Interface & IDE £99
- Ultimate Expansion with 170Mb drive £249
- Ultimate Expansion with 340Mb drive £299

Micro Podules for Ultimate Expansion
- SCSI Interface £69
- Vision24 Colour Digitiser £99
- ScanLight 256 handscanner £229
- MIDI Interface £49
- Analogue Interface £29

I/O Cards
- A3000 I/O Card - User/Analogue £25
- A3000 User Port/MIDI Card £44
- A300/A400 I/O Card - User/Analogue £29

Miscellaneous Add-Ons
- A300 4 way Backplane £25
- A300/A400 Fan £10
- A3000 Serial Port Upgrade £18
- ARC to BBC Serial Transfer Link £15
- MEMC1A Upgrade Kit £29
- Floating Point Accelerator - A5000 £89
- A4 Notebook Battery Pack £49
- 25MHz ARM3 Turbo Card £149
- Sportster 14.4 Modem & ArcFax £159
- Sportster 28.8 Modem & ArcFax £239
- DataSafe 120Mb Portable Tape Drive £399

PC Cards
- 486 25MHz 0Mb PC Card - A5000 £339
- 486 50MHz 0Mb PC Card - A5000 £399
- 4Mb RAM module £125
- 8Mb RAM module £249
- 16Mb RAM module £399
- MS-DOS 6.2 & Windows 3.11 £89

RiscPC 486 PC Card
Add PC functionality to your RiscPC with the 486SX-33 2nd processor card

£199

Accessories

Dustcovers & Carry Cases
- A3000 Keyboard cover £5
- A3000 Keyboard & Monitor cover £9
- A300/A400 Micro & Monitor cover £9
- A5000 Micro & Monitor cover £9
- 14" Monitor cover £6
- A3000/A3010 Carry Case £10
- A4 Notebook Carry Case £35

Mice & Joysticks
- Archimedes MK4 Mouse £24
- Acorn Logitech Mouse £27
- Quest Tracerball £20
- PowerPad Single Joypad £25
- PowerPad Dual Joypad £34

Miscellaneous Accessories
- A3000 Monitor Stand £15
- A3000 External Podule Case £10
- ARC Keyboard Extension Cable £5
- ARC Mouse Port Splitter £5

We stock the complete range of spare parts call for prices and availability.

Concept Keyboards
- A4 2010 Concept Keyboard £99
- A3 2010 Concept Keyboard £109
- 2010 BBC User Port Cable £12
- 2010 Archimedes Serial Cable £12
- ARC Concept Keyboard Design S/W £20

Multiscan Monitors
- Acorn AKF52 - 14" £219
- Acorn AKF50 - 14" £279
- Acorn AKF60 - 14" £299
- Acorn AKF85 - 17" £599
- Panasonic TX-D1732 - 17" £479
- Panasonic TX-D2131 - 21" £1359
- Sony CPD-15SF1 - 15" £287
- Sony GDM-17SE1 - 17" £819
- Sony GDM-20SE1 - 20" £1425
- Taxan EV400 LR - 14" £190
- Taxan Ergovision 580 LR - 15" £275
- Taxan Ergovision 880 LR - 17" £520
- Taxan Ergovision 2100 LR - 21" £1530

Diskettes

Excel Diskettes - Lifetime Guarantee
- Excel 3.5" DSDD Diskettes - 10pk £6
- Excel 3.5" DSHD Diskettes - 10pk £7
- Excel 3.5" DSHD Diskettes - 50pk £22

3M/Verbatim Diskettes
- 3.5" DSDD Diskettes - 10pk £6
- 3.5" DSHD Diskettes - 10pk £7
- 5.25" DSDD 80T Diskettes - 10pk £7
- 5.25" DSHD Diskettes - 10pk £10

Educational Discounts
available on some products to Schools, Colleges & Universities
Call 01582 745555 for details

Printers

LUTON SHOWROOM
Finway, Dallow Road, Luton, Beds.
Tel: 01582 74 55 55

WATFORD SHOWROOM
250 Lower High Street, Watford, Herts.
Tel: 01923 23 77 74

Laser Printers

Brother HL630	6ppm	£324
Brother HL660	6ppm	£464
Canon LBP430W	4ppm	£363
Canon LBP1260	12ppm	£909
Epson EPL-3000*	4ppm	£389
Epson EPL-5200*	5ppm	£471
HP Laserjet 4L	4ppm	£355
HP Laserjet 5P	5ppm	£587
HP Laserjet 4 Plus	12ppm	£938
HP Laserjet 4V - A3	16ppm	£1368
HP Laserjet Colour	2ppm	£4199
OKI OL-400ex	4ppm	£289
OKI OL-410ex	4ppm	£399
Panasonic KX-P4401	4ppm	£330
Panasonic KX-P4410**	5ppm	£318
Panasonic KX-P4430**	5ppm	£479
Panasonic KX-P4440**	10ppm	£679

All printers are covered by 12 months RETURN TO BASE warranty unless stated differently as below:

* = 12 months On-Site Warranty
** = 2 years On-Site Warranty

Inkjet Printers

Canon BJ200ex	80col	£170
Canon BJ30	80col	£153
Canon BJ230	132col	£247
Canon BJ300	80col	£364
Canon BJ330	132col	£404
Canon BJC4000 Colour	80col	£232
Canon BJC600e Colour	80col	£344
Canon BJC70 Colour	80col	£225
Canon BJC800 Colour	132col	£1065
Citizen Project IIC	80col	£198
Epson Stylus Colour	80col	£350
Epson SQ870	80col	£453
Epson SQ1170	132col	£609
HP DeskJet 320	80col	£164
HP DeskJet 320 & CSF	80col	£180
HP DeskJet 540	80col	£209
HP DeskJet 660 Colour	80col	£294
HP DeskJet 850 Colour	80col	£387
HP DeskJet 1600 Colour	80col	£834
HP PaintJet XL300 - A4	80col	£1599
HP PaintJet XL300 - A3	132col	£1769
Star SJ144	80col	£285

24pin Matrix Printers

Citizen ABC	80col	£103
Citizen ABC Colour	80col	£125
Citizen Swift 240X	132col	£219
Epson LQ100	80col	£99
Epson LQ150	80col	£112
Epson LQ150 Colour	80col	£158
Epson LQ570+	80col	£217
Epson LQ1070+	132col	£303
Epson LQ1170	132col	£441
Epson DLQ3000 Colour	132col	£672
Pansonic KX-P2023	80col	£108
Pansonic KX-P2135 Col.	80col	£124
Pansonic KX-P2124	80col	£198
Pansonic KX-P3626	132col	£252
Star LC24-15 II	132col	£232
Star LC24-300	80col	£188
Star LC240	80col	£92
Star LC240 Colour	80col	£103
Star XB24-200 Colour	80 col	£329
Star XB24-250 Colour	132col	£395

9pin Matrix Printers

Citizen Swift 90	80col	£114
Citizen Swift 90 Colour	80col	£121
Citizen Swift 120D+ Parallel	80col	£90
Citizen Swift 120D+ Serial	80col	£105
Epson LX300	80col	£98
Epson FX870	80col	£245
Epson FX1170	132col	£304
Epson DFX5000+	132col	£1188
Panasonic KX-P1150	80col	£259
Panasonic KX-P3696	132col	£259
Star LC15	80col	£177
Star LC100 Colour	132col	£89
Star LC90	80col	£89
Star ZA200 Colour	80col	£255
Star ZA250 Colour	80col	£315

Printer Accessories

Memory Upgrades

Type	1M	2M	4M
Canon LBP-4+	£139	–	–
Canon LBP-8 IV	£129	–	£299
EPL 4100/4300	£62	–	–
EPL 5200/5600	–	–	£199
Epson 5200/5600	£58	£115	£215
HP III/IIIP/IIID	£59	£95	£150
HP II/IID	£65	£95	–
HP 4L/4ML	£65	–	–
HP 4/4M/4P	–	£84	–
HP 4/4M/4P/4V	£75	£85	£125
KXP4410/4430	£89	£129	–
KXP4420/4450i	£89	£109	£165
KXP4400/5400	£75	£109	£175
Pan 4420/4450	£75	£115	£135
Pan 4410/4430	£129	£199	–
Pan 4400/5400	£89	£139	£229
OKI OL400ex	£99	£118	–

- HP DeskJet 500 256K RAM £75
- Panasonic 32K Buffer - Matrix range £16

Laser Consumables

Type	Toner	Drum	Dev
Brother HL630	£20	£99	–
Canon/Star 4s	£46	–	–
Canon LBP-8 IV	£70	–	–
Epson 4100/4300	£75	£89	–
Epson 5200	£85	–	–
HP III/IIID	£47	–	–
HP IIP/IIIP	£46	–	–
HP 4/4M	£72	–	–
HP 4L/4ML/4P/4MP	£49	–	–
OKI OL-400/800	£19	£189	–
OKI OL-400ex	£17	£129	–
Pan 4410/4430	£29	£80	£90
Pan 4440	£32	£108	£115
Pan 4420	£24	£60	£55
Pan 4450//51/55	£18	£75	£60
Pan 4400/5400	£12	£69	–

Sheet Feeders

Canon BJ10ex/BJ10sx		£40
Canon BJ300	Std: £86	2nd: £86
Canon BJ330	Std: £96	2nd: £96
Citizen Swift 200/240		£75
Epson LQ570/LQ870	Std: £47	Hi: £139
Epson LQ1070/1170	Std: £89	Hi: £207
HP DeskJet 320		£48
Panasonic 1170/1180/1123		£59
Panasonic 1124/2124		£79
Panasonic 1624/2624		£128
Panasonic 2135/1150		£30
Star LC100		£69
Star LC24-20		£69
Star LC200/LC24-200		£69

Tractor Feeders

- Epson LQ100/150 £29
- Epson LX300 £18
- Epson LQ570 Pull £39
- Epson FX/LQ870 £45
- Epson FX/LQ1170 £65

Colour Kits

- Citizen Swift 24/200/240 £36
- Citizen ABC £22
- Epson LX300/LQ300 £33
- HP DeskJet 320/540 £28
- Panasonic 2180/2123/2124 £32

Ribbons/Ink Cartridges

(Manufacturers Original Ribbons Only)

Type	Black	Colour
Canon BJ10ex/sx	£14	–
Canon BJ30	£10	–
Canon BJ200/BJ230	£16	–
Canon BJ300/BJ330	£11	–
Canon BJC70	£9	£14
Canon BJC4000	£8	£13
Canon BJC600	£7	£8
Canon BJC800/820	£16	£22
Citizen 120D+	£4	–
Citizen Swift 200/240	£4	£12
Citizen Swift 24X	£8	£18
Epson LX400/850/FX870	£4	–
Epson LX100	£4	–
Epson LQ100	£5	–
Epson LQ150	£4	£12
Epson LQ570/870	£5	–
Epson LQ1070/1170	£8	–
Epson Stylus 800/1000	£10	–
Epson Stylus Colour	£12	£27
Epson SQ870/SQ1170	£23	–
Fujitsu B100/B200	£18	–
HP DeskJet 500 Series	£19	£21
HP DeskJet 660	£20	£23
HP DeskJet 850	£22	£23
HP DeskJet 310/320	£13	£21
HP DeskJet 1200	£19	£21
HP PaintJet XL300	£16	£18
Kaga/Taxan 810/815	£5	–
Pan 1170/1180/1150	£7	–
Pan 1123/1124	£7	–
Pan 2180/2123/2124/2135	£7	£14
Pan 1624/2624	£8	–
Pan 3626/3696	£11	–
Star LC10/20/100	£5	£9
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†† - requires 2Mb RAM
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*info

Dave Lawrence and Dave Acton present more programs, tips and techie trivia from beyond the PRM.

The day today

Author: Stuart Allison

A bit of frivolity now from Stuart Allison: 'Some time ago *Archimedes World* published a program, translated from a PC Shareware source by James Noad,' explains Stuart. 'It displayed data relating to anniversaries and events that occurred on this date in the past. Reminders of things to do etc. may also be shown. I liked the idea but not the non-multitasking version. With the help of Joe Telford's excellent *WimpEd* this version now operates in the Desktop. Run the program as normal and click on the cake to find out what's so special about today.'

Pressing Menu on the Main Window provides the usual options, plus:

Not Today – leads to a dialogue box allowing the display of data from any date. Data relating to day-of-week is not displayed for obvious reasons.

Edit – If a text processor such as *Edit* has been loaded or seen, the data file '.own' (see below) is sent for modification/addition.

I find that loading this program from the *!Boot* file is (perhaps) its best use. If anyone can be bothered to update the files (more European, less Californian?), please let us know.

The file structure is as follows:

The directory *TodayData* has one data file for each month of the year. They are named: *TodayData.Jan*, *.Feb*, *.Mar* etc. You can also have a personal file named *Today.own*. This is so all your important dates aren't scattered among 12 files. All files are plain vanilla ASCII in this format:

Column 1: The record type which can be a B for birthdays, S for special dates in history or R for a reminder.

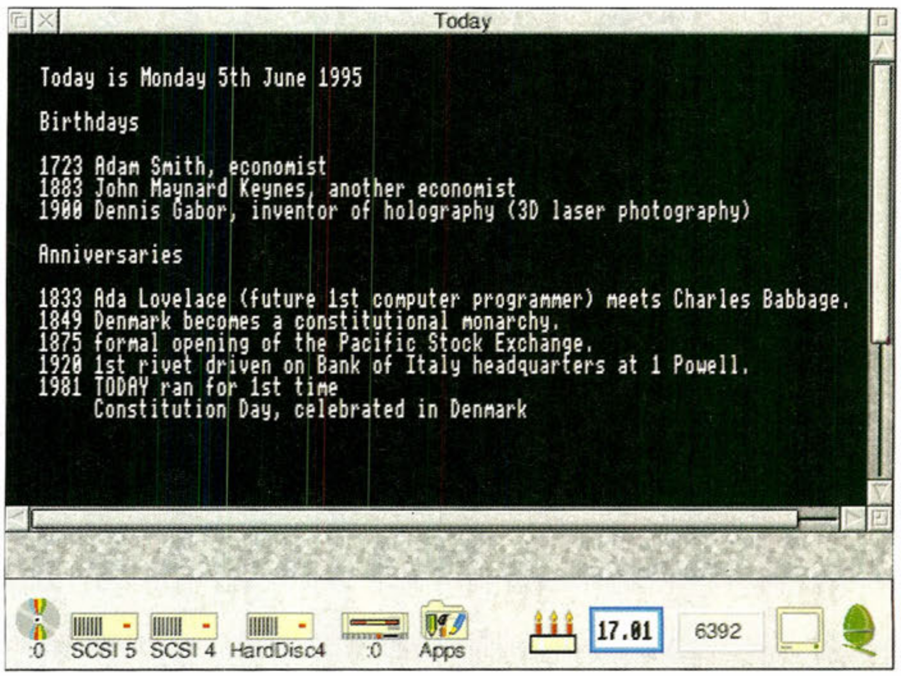
Columns 2–5: Month and day as MMDD with leading zeros. Zeros for either month or day cause *all* months or days to match when being scanned. For example, 0001 would match the first of every month while 0400 would match every day of April.

Columns 6–9: The full year of the event as four digits. May be left blank, in which case the message will move left.

Column 10: A special processing flag. Values may be: blank for no special processing, 'C' to continue a message from the previous line (note that you *must* repeat the date fields) or 'day-of-week digit' where 1=Sunday ... 7=Saturday. This will cause the message to display only if the date falls on a certain day of the week. Look in the November file for voting day examples.

Columns 11 – 70: The message to display for this date.

This format applies to *TodayData.own* also. You can put in birthdays; try putting in reminders a few days before the date in question to give yourself some warning.



Top Drawer

Author: Dave Acton

Several readers, including Patrick McFaddy of Newcastle, have asked over the months about rendering *Draw* files in their own programs. Unless you program in C, in which case libraries to handle *Draw* files exist, it can be a bit tricky to render such artwork in your own program. There are one or two BASIC libraries that do the job, but these can be a bit slow.

After a bit of tinkering, we came up with a small module called *Drender*. This should satisfy all your *Draw* file rendering needs and, being in machine code, will do so at a respectable speed too.

Three calls are provided, one to actually render the image and two others to make loading easier:

```
SYS "DrenderLoad","drawfile" TO image
```

loads a Draw file into memory (actually taken from the RMA) and returns a handle. This is in fact the address of the image.

```
SYS "Drender_Discard",image
```

will throw away an image that is no longer required and will also free up the memory used. Note that when a *Draw* file is loaded, it is preceded in memory by its length, and the handle returned actually points to this word. If you want to load a *Draw* file in your own program you must allocate an extra word of memory, put the length in the first word and load the file after it.

```
SYS "Drender_Render",image,flags,x,y,xsc,ysc
```

does the rendering. Only bit 0 of the flags word is currently used. If set, R4 and R5 contain the x and y scale factors, shifted up 16-bits, so &10000 means full size. R2 and R3 are simply the OS co-ordinates of where to plot the image.

As well as the module source, a simple example is included on the disc. This includes all the main possible elements of a *Draw* file and is rendered at two different scales to show that it is possible.

How it works

The code to render a *Draw* file is not particularly complicated, just a bit fiddly in places. The *Draw* file itself has a header as shown in figure 1. The bounding box is in *Draw* units, which are 1/256 OS units. Our module expects all the bounding boxes in the file to be valid, which they will be if the file has been produced by *Draw* itself or another reputable program. You can always load a troublesome file into *Draw* and save again to rebind it correctly.

After the header come the objects. These have headers as shown in figure 2. Our module begins by reading the current graphics window, and then plods through the *Draw* file, reading the type of each object and using a table to jump to the appropriate piece of code. If ever the bounding box for an object lies outside the graphics window, it is ignored. The possible object types are as follows:

0 – font table: Usually the first, this is simply a list of font names with one byte numbers by which the fonts are known in text objects. Our module has a table of 256 words and goes through the font table object (which has no bounding box incidentally), storing the address of each font name at the right place in the table.

1 – text object: This simple, old-style text object has a header including the font number, size and colours required. The text is a simple null-terminated string. Font_FindFont is called having looked up the name in the font table. If this fails, the system font (see below) is used, otherwise a ColourTrans call sets the font colours and Font_Paint is called to plot the text.

Plotting in the system font is tricky. The text must fill the bounding box given, so first the number of characters in the string is counted. A bit of multiplication and division is required to come up with the correct scaling factors and these are used by OS_SpriteOp,51 which plots a scaled character.

2 – path object: This is the true *Draw* object. Two calls are used to render paths – Draw_Fill if the fill colour is not 'none', and Draw_Stroke if the line colour is not 'none'. A ColourTrans_SetGCOL call gets the closest colour available and the rest of the code is simply concerned with converting the parameters in the path object header into the register values required for the *Draw* module calls.

5 – sprite object: The standard OS_SpriteOp,52 call is used to plot sprite objects at the appropriate scale. The biggest problem is working out the scale factors and setting up a suitable colour translation table. The former is done by reading the current x and y eigen factors, as well as those for the mode the sprite was defined in.

The colour table is a trickier affair. The ColourTrans_SelectTable call will set up a suitable translation table in most instances, but it seems to go wrong under certain circumstances. If the sprite has 16 or fewer colours then Wimp_ReadPixTrans is used instead. I have experimented by displaying sprites of all denominations (including 32 thousand and 16 million colour ones) in a variety of modes and between them, these two calls seem to get the colours right under all conditions.

6 – group object: Simple recursion is used to render groups. The bounding box is checked, as with other objects, and the code will only render a group if wholly or partially visible.

9 – text area object: These are ignored! The extra code to render such objects would be immense and so, given the very limited use of such objects, it is not included here.

12 – transformed text object: One of the new objects, this is essentially the same as the old-style text object but the header is preceded by a six-word transformation matrix. The Font_Paint call has been extended to plot outline fonts that have been transformed thus.

13 – transformed sprite object: The other new object type with a similar matrix at the start of its header. The matrix is passed on to OS_SpriteOp 56 which takes a pointer to such a matrix in R6. Before we do this though, we must multiply the transformation matrix by our own scaling matrix to arrive at the correct compound transformation. One of the problems of doing this sort of operation is that numbers can easily overflow – 32-bits is not a lot when numbers in *Draw* units are 256 times as big as their OS equivalents. For this reason, a 64-bit multiplication routine is used (which breaks down 32 by 32-bit multiplication into four lots of 16 by 16-bit) and after some shifting right and ORing, an accurate answer can be achieved without too much bother.

Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5
Today	Yes	Yes	Yes
Fire	No	Yes	Yes
DrawRender	No	Yes	Yes
Dismount	Yes	Yes	Yes
Any RC	Yes	Yes	Yes
Marbles	No	No	Yes
Flames	Yes	Yes	Yes

Figure 1 – Draw file header

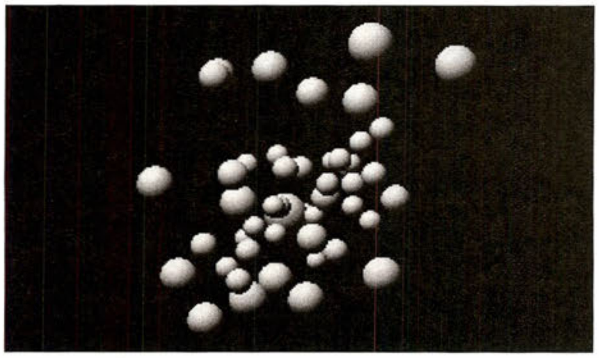
Size/bytes	Description
4	'Draw'
4	major format version
4	minor format version
12	file's creator (e.g. *Draw*)
16	bounding box of whole image

Figure 2 - draw object header

Size	Description
4	type
4	size
16	bounding box

Losing your marbles

Author: Alistair Turnbull



This is something we think happened to Alistair Turnbull a long time ago... If you've lost your marbles recently, perhaps it would be best if you didn't try running Alistair's latest prog as you're likely to end up ready for one of those stylish jackets with the buckles up the back.

Marbles starts by drawing a shaded ball at various scales and grabbing them off the screen as sprites. Fifty of these balls are then bounced around inside a cube, with the different sized balls used to represent depth. The program does not use depth sorting to correctly position balls further away behind those nearer, but as everything is moving quite fast you don't really notice this shortcoming. The palette is slowly mutated to add a little colour to the proceedings.

Burn: Cycle

Authors: Jan Vibe and David Brown

Sorry, not a port of the CDi game, but the first of two fiery graphical ditties this month. The first comes from the man himself, Jan Vibe. *Flames* is a classic example of a colour cycling automata-like prog for which Jan is justly famous. If you're interested we've broken Jan's prog down and a line-by-line description can be found in table 1. This might give you the incentive you need to start writing your own graphical doodles. Our second flaming demo comes courtesy of David Brown. *Fire* is a machine code program that uses dithering to increase the range of colours available. It does not palette switch and thus gives a much more fluid and realistic flame effect. David has even achieved a convincing heat haze and smoke effect above the flames – we think you'll be quite impressed.

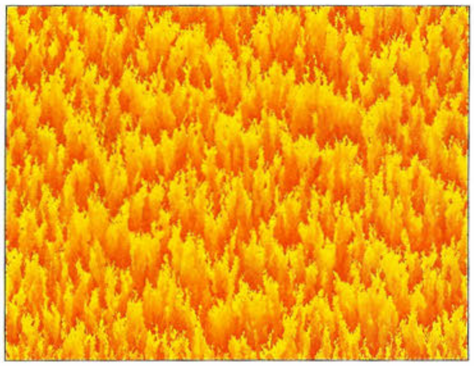




Table 1 – line by line flames

40	Start a timer used to control the colour cycling
50	Colour number used to cycle colours
60	Select a 16-colour screen mode and switch the cursor off
70	Call the colour cycling procedure once to start with to initialise the palette
80,110	A loop for all the points across the bottom of the screen
90	Select a random colour 1 to 15. Colour 0, (normally black, but changed to red by the colour cycling) is not chosen as it is not cycled. This means the background of the screen can be kept as a solid, unmoving colour while the screen is built up
100	Plot a point on the bottom of the screen
120,210	A loop for all lines on the screen
130,200	A loop for each point on each line
140,150	For each point, the colour of the point below it or the one to the left or right below it is chosen at random. 140 sets 'r' to -2, 0 or 2 for a random direction. (RND(3) will return 1,2 or 3, -2 gives -1,0 or 1). 150 uses POINT to read the colour of a pixel on the screen. The ABS is used as a safety net – POINT will return -1 if the point requested is off the side of the screen, the ABS will change this to a slightly more friendly (as far as the program is concerned) 1
160	There is a 20 per cent chance that the colour read will be changed. RND(1) returns a floating point value between 0 and 1. The colour is changed by adding 1 (using modular 15 arithmetic). This ensures that the new colour remains in the range 1-15 and that colour 0 is still not used
170	Selects the colour to use
180	Plot the point
190	Call the colour cycling
200,210	End of x and y loops
220,240	Finally call the colour cycling for ever...
270	Start of the colour cycling routine
280	If it is time to cycle the colours (every 20th of a second – see line 340 below)...
290	Move the base colour on by one, again using modulo 15 arithmetic
300	Perform a loop 15 times
310	Calculate the actual colour number to change by adding the loop counter to the base colour number
320	Change the palette entry for this colour to a red/orange/yellow colour
340	Set the timer for the next cycle to occur 5/100ths of a second later

Dismount update

Author: N. Marriott

Going back to August 1993, we carried a short program by Robert Adamson to quickly dismount floppies:

'To avoid the desktop getting confused it is recommended you dismount each floppy after use,' Robert said. 'This entails bringing up the disc menu each time and which can be a pain when looking through a whole batch of discs. So, try this utility instead.' Fourteen-year-old Robert provided a short desktop application which sat on the icon bar.

Two years later, here is a machine code version of the same program by Nicholas Marriott. Being a module task it takes up much less memory than the original.

Just click on the dismount icon with Select to dismount the disc in drive 0. Conversely, clicking with Adjust mounts the drive 0 disc. To keep the code even smaller, Nicholas doesn't provide a menu, so to quit the task either RMKill the module or use the task manager window (find the entry for *Dismount*, click with Menu and choose Quit).

Singing corner

Author: Mr P Adamson

Our regular trip to Singing corner continues with a further collection of MIDI files from Mr P Adamson. This month he has provide two sets of tunes, three blues and three 'traditional.' Files should play well through *Perform* or *Rhapsody*, although scores may need editing for correct print out.

Bluebrass was originally written for a mixed ability brass quartet with the lead being harder than the other parts.

Busker Blues was written for a duet of Clarinet and Eb Sax – not transposed as MIDI file.

John Browns Boogie is the traditional tune given Bluesy treatment originally written for recorders.

Hatikvah and *Hava Nagila* are traditional Jewish tunes while *Little Brown Jug* is of American origin.

The Israeli tunes are arranged in traditional style whereas the *Little Brown Jug* is semi-swing/Blues. It is quite hard to arrange without thinking of Glenn Miller. The middle section is Little Red Wagon.

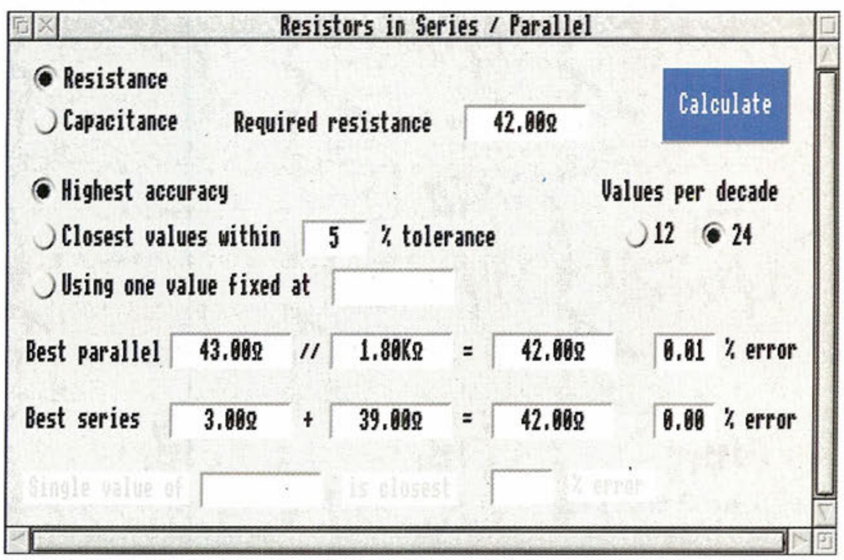
Ohm improvement

Author: Paul Marshall

Our regular electronics expert Paul Marshall adds another utility to his suite of circuitry aids. *AnyRC* will help you get your resistances spot on, as the author explains:

'Only a finite number of different resistor values are manufactured. Low cost ranges in common use have only 12 'preferred' values per decade, thus there is a difference between adjacent values of 20 per cent, although the resistors themselves may have a tolerance of five per cent or even two per cent.

'Virtually any intermediate value can be obtained by using two resistors in series or in parallel. A parallel pair is usually more convenient for a printed circuit board layout, while series is better for high voltage applications. The value of resistors in parallel is given by:




```
R = 1/(1/r1+1/r2)
```

and in series simply by:

```
R = r1 + r2.
```

'*AnyRC* calculates the two values required to obtain a given target resistance. It may be desirable to keep the two values as close to each other as possible to aid power sharing or voltage distribution, so the option is provided to achieve this, provided the tolerance of the target value can be relaxed.

'In 'Highest Accuracy' mode the results are only displayed when closer than 20 per cent, but usually the results are surprisingly accurate. Another mode allows one of the values to be chosen by the user. This can be faster if you know near enough what one value will be. The program also tells the user if a single value would be closer than a pair. 'Select the various options, then enter the target value in the "required" box. Press Return, or click on "Calculate." The displayed results can also be altered to see the result of changing one or both values.

'The algorithm used is rather crude – the program simply tries every combination to see which is best, so is therefore rather slow. No doubt a proper mathematician could come up with something better.

'Capacitors can also be calculated, and 12 or 24 values per decade selected. When entering the value to be calculated the suffix K, M, n or u (for μ) may be used. Ohms or pf are used by default. Notice I didn't use the omega symbol for ohms because there isn't one – The program redefines system font character 191 to omega'.

(This is normally a Spanish-style upside-down question mark, so if there are any Spanish or Latin American users with questions about ohms, they will need to make their own arrangements).

***QUIT**

All manner of submissions are welcome – doodles or applications of a more serious nature alike. Musical offerings like Mr Adamson's MIDI tunes would also be welcome, as would any Risc PC graphical ditties. Send them to:

*INFO, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP (e-mail starinfo@acornusr.demon.co.uk)

Please put your name, address and program title on every disc and include a text file containing at least your name, address and disc contents. An SAE will ensure your discs are returned and any other instructions, diagrams, saved screens and so on are most welcome.

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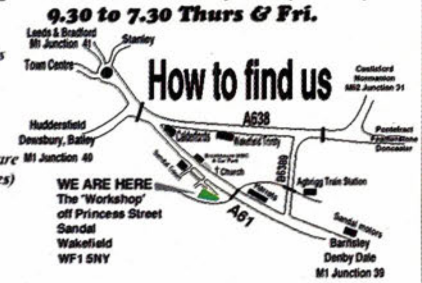
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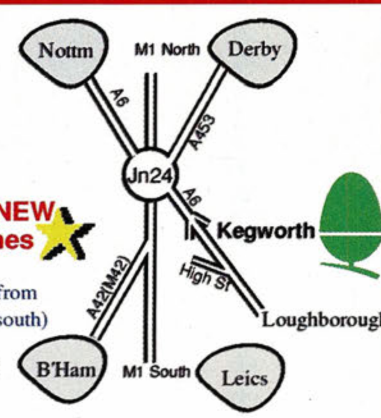
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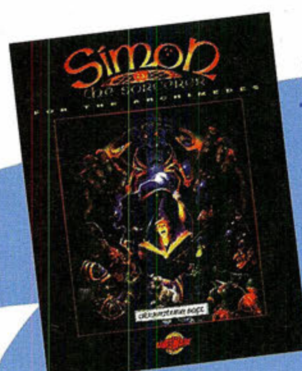
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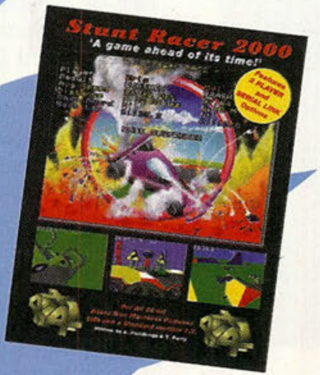




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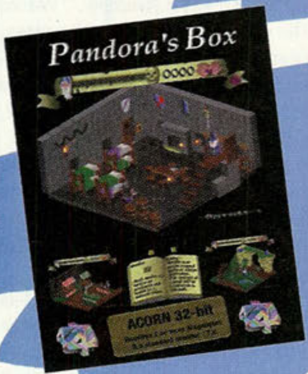
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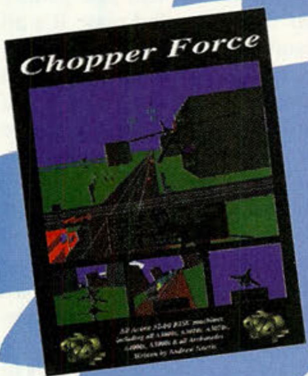
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The Moxon Interview

Andrew Foyle

> We can talk to customers as human beings, while we have the technical knowledge to develop material – this skill is increasingly in demand

It's uncanny how many times you hear that the key to business success is 'it's who you know'. Looking back on the history of Andrew Foyle, founder and director of VTi and Eclipse, it rings true: he's had more fingers in more pies than Little Jack Horner.

'It all started back in 1989 when myself and Hugo Fiennes set up The Serial Port,' remembers Andrew. 'The product which made us a household name was a parallel port joystick interface, confusingly called The Serial Port Joystick Interface.'

There were other important products, like one of the first SCSI interfaces for the Archimedes, but towards the end of 1991 Andrew's side of the business – the side that developed the products – decided to go solo. So Andrew and his two main aides, Richard Jelbert and Jason Tribbeck, needed a company name, and quickly.

'We had a crisis meeting in a pub,' says Andrew, 'and came up with "Vertical Twist" as a good, techie name for the company. The inspiration for the name came from the Archimedes screw: vertical twist, geddit?'

So Vertical Twist continued to develop products. Turnover grew, and the company set up a number of deals with other suppliers to provide products to be badged under other names. The company soon realised that the games market was an area ripe for milking – at the time the main games companies were 4th Dimension and Krisalis, and there was a growing market for conversions from other platforms.

'It was with game conversions in mind that we secured a number of licences,' says Andrew. 'We got *Xenon II* from The Bitmap Brothers, *James Pond II* and *Global Effect* from Millenium, and *Dune II* from Virgin, and on this basis our games company, Eclipse, was born.

'We also acquired Software 42, which gave us *ArcFS 2* and a number of games – like *Fred*, *Cycloids* and *Ixion* – which gave Eclipse a product range straight away.'

Initially, most of these conversions were marketed in conjunction with Gamesware, but having worked on *Simon the Sorcerer* and *Playdays*, Eclipse went solo and now sells and develops games on its own. It was at this time that the Vertical Twist name, thought too esoteric and technical, was changed to VTi.

So, after a number of years working with other companies and providing products under other labels – Northwest SEMERC's Resound sampler is a re-badged VTi printer port sampler, for example – the development team that brought you some of the best game conversions is doing its own thing.

'Now VTi/Eclipse is regarded as one of the larger Acorn companies,' says Andrew. 'We're certainly one of the largest providers of games, and one of the larger providers of hardware add-ons. We're overhauling our entire product range so it is more focused and has more mass appeal, but our core activity is to develop new products.

'Some products we'll publish ourselves; some will be published by other companies; and some will be developed under contract. But we'll definitely continue to release new products for the Acorn range.'

And, as befits an innovative company, VTi is looking to the Internet as a potentially huge market for those who join it at the right time.

'We're going to provide a one-stop Internet shop,' says Andrew. 'We'll have everything from WWW space to Internet connections to all-in packages. We won't just sell access links to the Internet, we'll sell complete packages, including modems, cables and so on, that you can simply plug in and use straight away.

'We see major growth for the company in this area. We'll be able to provide on-line upgrades for VTi products and on-line technical support for all our products.'

As far as Acorn users are concerned, then, this is the chance for Acorns to find a real home on the net. The biggest Internet provider at the moment – Demon – has an Acorn support area, but it's horribly over-subscribed, and getting onto the net is far from plug-and-play: it's all Public Domain software and editing strange Autoexec files full of IP addresses and acronyms. VTi intends to simplify the whole thing, while looking at the whole on-line marketplace at the same time.

'Online Media is another interesting area', says Andrew. 'We're doing a version of *Dune II* for the set-top box, and this is potentially just the tip of the iceberg. We have a skill in that we can talk to customers as human beings, while we have the technical knowledge to develop material – this skill is increasingly in demand.'

So we can expect VTi to have more fingers in more pies. But globally, this time.

Mark Moxon AU

REMOVABLE HARDDRIVE SYSTEM



* TOTAL DATA SECURITY
* EASY DATA TRANSFER BETWEEN COMPUTERS
* IDEAL HARDDISC BACKUP

The removable harddrive system fits into a 5¼" drive slot in the RiscPC and harddrives are available in many sizes which can simply plug in and out of the slot as required. The drive may be locked in place to prevent unauthorized removal. For total security the drive may be removed and stored in a safe place to prevent unauthorized access to your data. Because the removable drives are available in any size, they are also ideal for use as backups for existing harddrives, and may be easily transported between different computers for rapid transfer of large datafiles. The system is available for use with both IDE and SCSI filing systems.

IDE systems

Mounting Kit for IDE systems			£29.99		
Plug in IDE drives:-					
80Mb	£99.00	170Mb	£135.00	420Mb	£164.50
540Mb	£199.75	730Mb	£235.00	1Gb	£345.00

SCSI systems

Mounting Kit for SCSI systems					£35.00
Plug in SCSI drives:-					
525Mb	£219.00	730Mb	£256.00	1Gb	£459.00

PAL TV CODERS



PLC/3

Price £104.57 inc vat



AVK/3

Price £411.25 inc vat

There are now two coders in our range which cover all Acorn computer models and allow Computer output in virtually all screen modes to be converted to a PAL TV signal suitable for recording to a video recorder or displaying on any TV with a Video input socket. The PLC/3 is our standard model which works in any of the 'standard TV' modes (eg modes 12 & 15) on all Acorn computer models. (Note that the AKF60 & AKF85 monitors will not work in these modes, although the PLC/3 will still produce a TV output with the RiscPC).

A new addition to the range - the AVK/3 will work with all computer models in all screen modes up to 800 x 600 resolution in 16 million colours. It has a remote control with facilities for zooming, freezing & panning the TV picture. Ideal for lectures and demonstrations etc. Older Acorn Computer models may have 9 pin monitor sockets. 9 to 15pin & 15 to 9 pin converters are available at £4.11 each.

RiscPC Computers

NB Prices inc VAT & Delivery!

2Mb HD210+AKF60	**£1404**
2Mb HD210+AKF85	**£1727**
5Mb HD210+AKF60	**£1520**
5Mb HD210+AKF85	**£1844**
9Mb HD420+AKF60	**£1874**
9Mb HD420+AKF85	**£2195**

RiscPC upgrades:-

486PC Card (Only with RiscPC)	**£116.32**
1Mb to 2Mb Vram	**£116.32**
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8Mb SIMM Ram	**£258.50**
16Mb SIMM Ram	**£405.37**
16bit sound card	**£69.32**

Printers

Colour printers

BJC600E	**£419.00**
BJC4000	**£289.00**
Epson Stylus	**£419.00**

B/W

BJ30	**£199.00**
BJ200EX	**£217.00**

Laser

HP4L	**£449.00**
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Many other printers are available. Please 'phone for prices

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Bare IDE Drives

80Mb	**£76.37**
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260Mb	**£116.32**
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540Mb	**£169.75**
730Mb	**£199.75**
1Gb	**£299.75**

Bare SCSI Drives

525Mb	**£199.00**
730Mb	**£226.00**
1Gb	**£429.00**

SCSI Cards

SCSI Cards

All Acorn Machines	**£116.32**

SCSI Cable

Internal	**£9.99**
External	**£19.99**

SCSI II Cards

RiscPC	**£199.00**

SCSI II Cable

External	**£22.32**

Pineapple Software

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Essex IG1 1XT

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For demonstrations of most of our advertised products why not come and visit us in our new offices (easy parking) where you can see most of the Acorn range of computers and other hardware in action.

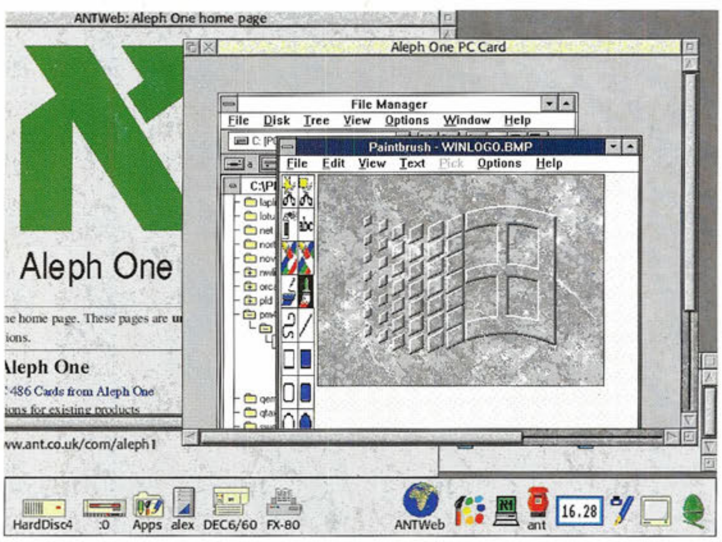
Why are you waiting

when you could be using an Aleph One Risc PC card?

You won't wait around for an Aleph One Risc PC card. Its powerful 486DX processor will complete tasks much more quickly than the alternatives. The card fits easily into your Risc PC's second processor slot in a few seconds.

Fast processors

Software executes at real PC speeds with a choice of powerful 486DX-40 or 486DX2/80 processors blazing through all your tasks.



Windows support

You can use most standard Windows or DOS software on the Risc PC card – at the same time as your existing RISC OS software. You may also wish to connect to existing PC networks.

ARM graphics support

While you're working in Windows, the RiscPC's ARM processor is still busy acting as a graphics accelerator to further boost performance. High-resolution Risc PC video modes are supported, up to 1280x1024 resolution. Subject to suitable VRAM being fitted to the Risc PC, you can enjoy up to 24-bit colour and a 256 colour palette in 8-bit per pixel modes.

Share Acorn peripherals

Save money compared with the cost of buying separate systems: the PC card can use all your Acorn peripherals including hard discs, removable discs and CD-ROMs, Ethernet network cards and printers.

Connect to PC networks

Use the Risc PC card with optional networking software to bridge between your computer and local area networks. Any PC network server can be used – Novell Netware or Windows .

Recommended retail prices

Choose from the 486DX-40, running at 40MHz, for **£349**, and the 486DX2/80, running at 80MHz, for **£399**. Cards are available direct from Aleph One.

Also still available at new reduced prices – Aleph One podule 486 cards for the A5000, A540, A4x0. 486SLC-25 is £299 and 486SLC2/50 is £349 (prices exclude VAT and RAM). RAM for Risc PCs and podule cards £99 for 4MB, £199 for 8MB and £379 for 16MB. All prices exclude VAT.

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